Disruptions in Banking Sector in the Current Scenario

28th February 2018

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Dr.K.VANAJA

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Artificial Intelligence in Banking

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Abstract Artificial Intelligence is the simulation of human intelligence processes by machines especially computer system. It includes learning, reasoning and self correction of symbolic information. The revolution brought by Artificial intelligence has been the biggest in some time. Our framework on it tells about the sophisticated machine learning and the idea of transferring the intelligence from humans to machines with supreme computational capabilities. Now the Artificial intelligence are woven into baking’s fold and their potential is too vast to predict. Our framework helps to know a dive into the use of AI and MI in BFSI.

Keywords:- Machines, capability, computational.

PROLOGUE

Since the development of the digital computers in 1940, it has been demonstrated that it can be programmed to carry out very complex tasks, but there’s always a limit to the speed with which humans can perform the given task. Artificial Intelligence helps to overcome this very challenge as “Machine Intelligence is the priceless invention that humanity will ever need to make”. The Technology in banking has changed a lot over last few years from video displayed information to digital information, from simple graphics to 3D images of the behaviour of financial markets. Computers are now on each desk with decentralisation and client – server technology. This is the way to provide software solution and expertise in local banks branches to non – experts people, to increase decision makers efficiency and to save time.

LITERATURE REVIEW

The development of these technologies is motivated specially by two goals. First, to reduce the costs of automated tasks (for efficiency and cost consideration) and secondly to increase efficiency and improve the consistency of decisions. We can note that for the first one, this could not be the same as in manufacturing where there are a lot of automated tasks. Financial products are mostly immaterial and need to be explained. Companies obtain their comparative advantages mainly from the provision, storage, and processing of information and knowledge with regard to their customers and competitors.
TYPES OF ARTIFICIAL INTELLIGENCE

ANI – Artificial Narrow Intelligence – It comprise of basic/role tasks such as those performed by chatbots, personal assistants like SIRI by Apple and Alexa by Amazon.

AGI – Artificial General Intelligence – Artificial General Intelligence comprises of human-level tasks such as perform by self-driving cars by Uber, Autopilot by Tesla. It involves continual learning by the machines.

ASI – Artificial Super Intelligence – Artificial Super Intelligence refers to intelligence way smarter than humans.

ARTIFICIAL INTELLIGENCE IN BANKING

In the field of technology based banking, Information Technology and Electronic Funds Transfer System have emerged as the twin pillars of modern banking development. Products offered by banks have moved beyond conventional banking and access to these services have become round the clock. This, indeed, is a revolution in Indian banking industry.

Payments of banks will open another alternative channel after internet and mobile banking, and help improve efficiencies and reduce costs involved in catering to customers in the rural and semi-urban areas.

The ‘Digital India Campaign’ launched in July 2015 by the Government of India, with an aim to ensure that the Government services and subsidy benefits are made available to citizens electronically by improving online infrastructure and by increasing Internet connectivity will pave way for technological reforms in India and make the country digitally empowered.

The field of Artificial Intelligence has produced a number of cognitive technologies. The individual technologies are getting better at performing specific tasks that only humans used to be able to do. We call out some of these cognitive technologies, and it is these that business and public sector leaders may focus their attention on.

- Natural Language processing – Ontology Based information extraction and Speech recognition
- Natural Language generation
Cognitive computing solutions offer various capabilities, which enable the above technologies to perform tasks as a human brain will do.

The incredibly innovation of business growth and value also create first order Cyber Risks. Innovative Technologies such as Chip-based cards and SMS-based OTP have helped the banks to implement security controls to mitigate traditional cyber risks. However, as the technology has evolved, attack vectors have also become more sophisticated.

In which industry used in the application of Artificial Intelligence and machine learning can help turn the tide. The Artificial Intelligence promise of powered engagement tools is to offer customers with applications that recognize what they want and really help them do something about it. Imagine if your bank’s submissive, impersonal digital banking portal bowed into a virtual financial assistant that is singularly focused on helping you make the best of your financial health.

An assistant that never sleeps; constantly running in the background, monitoring your overall financial data in real time and pushing out actionable insights about your finances and opportunity to take smart action. It helps us take steps to improve your financial health by recommending easy ways to save more, spend smartly and make plans for our financial future. Artificial Intelligence virtual assistant would go everywhere with you, and you could interact with it on your cell phone by chat or through your connected home devices by voice.

Finally, assistant would not only monitor your historical data, but it could help to predict upcoming financial events and get you organized so you can deal with your finances proactively.

**METHODOLOGY**

Learning is considered as a parameter for intelligent machines. Deep understanding would help in taking decisions in a more optimized form and also help then to work in most efficient method. As seeing is intelligence, so learning is also becoming a key to the study of biological and artificial vision. Instead of building heavy machines with explicit programming now different algorithms are being introduce which will help the machine to understand the virtual environment and based on their understanding the machine will take particular decision. This will eventually decrease the number of programming concepts and also machine will become independent and take decisions on their own. Different algorithms are introduced for different types of machines and the decisions taken by them. Designing the algorithm and using it in most appropriate way is the real challenge for the developers and scientists. Fundamentally and scientifically these algorithms depends on the data structures used as well as theories of learning cognitive and genetic structures. But still natural procedure for learning gives great exposures for understanding and good scope for variety of different types of circumstances. Many machine learning algorithm are generally being borrowed from current thinking in cognitive science and neural networks.

**CONCLUSION**

In this framework we propose to develop some cognitive science techniques which could be useful for several domains of banking. Thus we have to consider the knowledge acquisition stage which is known as the bottleneck in the construction of this system.

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Artificial Intelligence in Banking

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Abstract: Today, digital technologies are evolving at an unprecedented rate all across the globe. India, too is witnessing radical growth in Information and Communication Technology at a very rapid pace. As a result, Indian Banking sector is undergoing huge transformation to offer better and enhanced services to its customers. Establishment of Innovation Labs is facilitating the banks to explore various avenues in the banking arena like Biometrics, Artificial Intelligence, Robotics, Data Analytics, Wearable technology etc. Digital wallets have already paved the way for cashless transactions. This research paper undertakes the study of Artificial Intelligence in Banking. The study also highlights the application of emerging technology in few select banks in India. This paper is descriptive in nature. Secondary data are collected from various websites, reports and journals.

Keywords: Artificial Intelligence, Banks

INTRODUCTION:

Banks play a central role in the economy. They keep the savings of the public and finance the development of business and trade. Furthermore, numerous studies argue that the efficiency of financial intermediation affects economic growth while others indicate that bank insolvencies can result in systemic crises which have adverse consequences for the economy as a whole.1

Thus, the performance of banks has been an issue of major interest for various stakeholders such as depositors, regulators, customers, and investors. While bank performance has been traditionally evaluated on the basis of financial ratios, advances in operational research (O.R.) and artificial intelligence (A.I.) have resulted in a shift towards the use of such state-of-the-art techniques. Of course, this is not surprising, since O.R. has been extensively applied to finance during the last half century.

Over the last few decades there has been a progressive evolution of technology aimed at creating “artificially intelligent” systems. The conceptualization of artificial intelligence and its usefulness are the subject of discussion in academia and business practice. The introduction of revolutionary technologies eventually brings basic changes to processes and the reorganization of entire industries. Industries, and now auditing, are making substantive investments in these domains.

We are living in the midst of a surge of interest and research into Artificial Intelligence (hereby A.I.). It can seem like every week there is a new breakthrough in the field and a new record set in some task previously done by humans. Not too long ago, A.I. seemed a distant dream for especially interested researchers. Today it is all around us.

OBJECTIVES:

1. To study the emerging technology in Indian Banking Sector
2. To know about the Artificial Intelligence in Banking Sector
3. To know whether the Artificial Intelligence in Banking Sector a boon or bane.

METHODOLOGY:

The study is descriptive in nature and is based on secondary data. The data are collected from various reports, journals, news articles and many websites.

HISTORY OF BANKING:

The history of banking began with the first prototype banks where the merchants of the world, who made grain loans to farmers and traders who carried goods between cities. This was around 2000 BC in Assyria and Sumeria. Later, in ancient Greece and during the Roman Empire, lenders based in temples made loans, while accepting deposits and performing the change of money. Archaeology from this period in ancient China and India also shows evidence of money lending activity. Many histories position the crucial historical development of a banking system to medieval and Renaissance Italy and particularly the affluent cities of Florence, Venice and Genoa. The Bardi and Peruzzi Families dominated banking in 14th century Florence, establishing branches in many other parts of Europe. The most famous Italian bank was the Medici bank, established by Giovanni Medici in 1397. The oldest bank still in existence is Banca Monte dei Paschi di Siena, headquartered in Siena, Italy, which has been operating continuously since 1472.
Emerging technological trends in the Indian banking sector:
The Indian Banking Industry is in the midst of the Information Technology Revolution and its changes have put forth the competition among the Banks world wide. It is observed that after the Liberalisation, the utmost need of the hour was that the banks should give top priority and preference to the customer service and should cater to their needs at all times. The Financial reforms that were initiated in the early 90s and the globalisation and liberalization measures brought in a new operating environment to the banks which involves services such as: anywhere banking, Tele Banking, E-Banking, Internet Banking, Web-Banking, virtual Banking, Mobile Banking, credit Cards, Debit Cards, Automatic Teller Machines Facility, Electronic Clearing Services, Electronic Fund Transfer, SWIFT, Core Banking, Real-time Gross Settlements, Electronic Payment Services etc. To attain the satisfaction and comfort of the customers, the banks are trying hard to meet the upcoming demands of the customer by offering the innovative and attractive packaged technology-based services to their customers.

Internet Banking/ e-banking:
Internet has touched almost all the aspects of our lives and made the world’s information available to man in just his finger tip with the help of the Internet. Internet Banking is also known as the e-banking. It is the latest in the series of the technological wonders, which uses the Internet for delivery of banking products and services in the recent years. It is rightly said by S. Uma, ‘Today, when the customer is king and the service providers are rushing to pay obeisance to the king, financial service providers cannot be left behind. In their quest to differentiate their services and gain competitive advantage over their competitors, the financial service providers are trying to provide their services to the customers in the comfort of their homes. The Internet has emerged as a convenient channel for these service providers’. (Uma 2011, 150)

Internet banking enables its customers to get their inquiries or transactions processed online without any reference to the branch at any time, i.e. anywhere and anytime banking. Internet Banking allows the Banks to overcome the trade-off between content and reach, it also enables Banks to provide services to a much wider audience.

Open banking is the new normal
Open banking—a connected ecosystem for financial and non-financial services with multiple underlying service providers—is the future of banking.

The launch of UPI by the National Payments Corporation of India (NPCI) has thrown open the gates for innovation in the open banking space. UPI will empower payment service providers to create state-of-the-art products/offerings without being limited by the underlying account relationships. Customers will be given the flexibility that they desire and a unified interoperable interface will allow all service providers to innovate for better customer experiences.

Blockchain and the race to production
As banks try to become more efficient and agile to meet the increasing demands of customers, blockchain will be one of the enablers for re-imagining processes. In 2017, banks will increasingly move some projects from pilot to production and leverage blockchain to automate inter-organisational processes. The recent Emirates NBD and ICICI Bank partnership to launch a blockchain pilot network for international remittances and trade finance is a precursor for advances in this technology.

Electronic Payment of the Bills:
Electronic Payment of the Bills is also known as Electronic Bill Payment (EBP). It has important strategic dimensions, as it can become an integral part of a bank’s portfolio of services and can be used to attract customers to the bank by making transactions more efficient and enabling customers to access their financial information more easily. Its rightly said that, ‘Online, interactions allow use of such tools as e-CRM to create a more intimate relationship with the customer and promote and deliver other online products and services’. (Uma 2011, 153) In India ICICI has already started a portal named BillJunction.com and many other banks are trying to set up EBP by using the NET for the payment of utility bills. It is only possible if they get tied up with the Mobile companies and if we look around we see people paying their bills on mobiles and soon the days are going to come when the bills will be addressed to us on mobiles rather than on papers.

Banking architecture simplification:
All of these overlapping technologies will be built on the bedrock of banking architectural simplification. The new year will see banks move to componentisation instead of the traditional monolithic architecture. In other words, complex architecture will be broken up into smaller bite-sized pieces for ease of deployment and upgrade for specific functionalities. Componentisation will not only increase agility to modernise selectively to keep pace with current technology trends, but also allow for risk-mitigation of projects.
Artificial Intelligence in Banking Sector

1. Fraud prevention:

Securing the money of clients is one of the primary functions of banks. We rely on banks to securely execute our transactions. Hence when machine learning first came in, it was mainly initiated in securing the existing banking infrastructure. Traditional algorithms could only catch a fraudulent transaction when it violated some of the pre-set rules. With machine learning, we can go a little deeper and identify suspicious activities based on the transaction history and behavior of individual customers. For instance, if a huge transaction is initiated from a bank account with a history of performing minimal checks, machines can immediately withhold it until it is verified by a human. The fundamental benefits lie in the fact that machines can perform such analysis in real time and can also learn from the results of past actions.

2. Chatbots:

Chatbots are artificially intelligent software that can stimulate a human conversation. These bots use a technique called natural language processing to understand human inputs (voice or text) in contextual terms and respond accordingly. Bankers need to address customer queries on a large scale. Most of these queries are similar to each other and hence offer scope for automation. Before advancements in machine learning, it was very difficult to make a computer understand human queries in the right context. Now we have chatbots that can take up all these tasks thus helping bankers focus on only the critical customer issues. One popular use case of such bot is the recent initiative by HDFC Bank to launch its very first chatbot, ‘Eva’. This effort gained tremendous media coverage and helped HDFC serve many of its clients.

3. Risk Management:

While providing a loan to any client banks go through a process of risk assessment to estimate the creditworthiness of a prospect. Traditional systems relied on historical data like transaction history, credit history and income growth over years to understand the risk associated with every loan extended. This resulted in inconsistent estimates as historical data is not always an accurate standard to predict future behavior. Then came machine learning to the rescue. Machine learning allows analysis of real-time data of recent transactions, market conditions and even latest news to identify potential risks in offering credit. With the help of predictive analytics, an ML algorithm can analyze petabytes of data to understand micro activities and assess the behavior of parties to identify a possible fraud. This is something impossible for human investors to perform manually.

4. Marketing and Support:

With the ability to analyze past behavior to optimize the present future campaign, machine learning is an influential tech for marketers. By analyzing inputs from various data sources like behavior analytics from mobile
and website, recent transactions, response to ad campaigns etc. Marketers are able to craft targeted campaigns. They can also map the entire consumer journey from first interaction to purchase using clever attribution models. The modern customer’s journey goes way beyond the initial account set up especially in banks. This makes it important for banks to provide best in class customer support. Unfortunately, traditional CRMs and ticket management system fail to solve unique problems. Machine learning algorithms can learn from their past actions and hence improve the quality of service thus, aiming for best possible customer experience.

5. Algorithmic Trading:

Artificial intelligence allows the analysis of varying complicated market factors at the same time. Today there are many Hedge funds across that leverage high-end systems to deploy AI which learn by taking input from distinct sources of financial markets and sentiments. This enables real-time decision making by eliminating the time gap between insights and data collection. While the strategy of investment remains different for each fund, the background technology of AI remains the same. Ultimately most of the high-frequency trades (HFTs) can soon be automated by identification of trading opportunities based on the inputs. Some popular hedge funds using AI include - Two Sigma, LLC, PDT Partners, DE Shaw, Man AHL, Citadel, Vatic Labs, Point72, Cubist etc. While having a high-level idea of technology seems to help, we need a lot more detailed insights when we go into actual implementation.

Artificial Intelligence: Boon or Bane?

Most business administrators and chiefs can make a supposition of the advantages that join utilizing programming to deal with operations set up of individuals. Coordinate reserve funds on time and money are self-evident, yet the advantages likewise run somewhat more profound than that. Before we go into the specialized parts of AI benefits for finsec, but the advantage of PCs over individuals is big.

Making things simpler: Risk management
These may sound obvious, but they show how valuable AI is for saving both money and time for the financial sector. The advantages of using AI in place of humans are:

- Risk preference is automated
- Zero errors
- Efficiency is more, by auto-sorting and generalization
- Customer service at ease; speed and effectiveness

No personal issues
Let’s assume you have an informed and experienced worker yet not far off you find that they have individual issues that meddle with their execution. Either lateness, state of mind, substance mishandle, and so on, and you have taken a stab at conversing with them however without much of any result. Presently you need to release them and supplant them. With AI, individual issues are invalid, and if there is an issue with the product it is a one-time settle.

How safe is AI?
A significant threat to the financial sector is information security and absence of dependable AI. In accordance with the past concern, AI is just in the same class as who has developed it, yet in addition whose hands it is in. Information and licensed innovation security is a colossal risk to any new innovation. On one hand, control is required, however how dependable is the state when they have the AI source codes for administrative examination?

Banking and AI: the future?
There is most likely that AI can be important for the financial industry, however it includes some significant downsfalls. We hope to witness both examples of overcoming adversity and heartbreaking disappointments through the span of the following couple of years. With any original innovation, there will be bugs to settle, and an expectation to absorb information before suggesting industry nature with AI is acquired.

CONCLUSION:

The innovations in Indian banking sector highlighted in the study indicate that the banks are ready and equipped to take a leap and offer modern banking services. The current trends in banking are building blocks of the
Disruptions in Banking Sector in the Current Scenario

"Cashless Economy". Though there are few challenges, technology will keep evolving and with collaborative efforts of Banks, Government and end users, overcoming these challenges will certainly be possible. The initiative of Government of India will very soon achieve its mission and rural India too would be "digitally literate". Banks will have to develop a strategy to bridge the gap of technology in rural banks and urban banks. Today, Indian banking industry is on the threshold of "next generation banking".

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Artificial Intelligence

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Abstract: Artificial intelligence has brought upon one of the biggest revolutions in the banking industry. Where traditional software was hard-coded with rules to define the area of execution, artificial intelligence allows computers to create their own rules based on the guidelines and data fed into the system. This means that now computers can move a step ahead from rule-based to logical thinking and reasoning. Being one of the evolving technologies we can see rapid innovations in this space. Businesses across all industries are working to leverage its power to improvise or even transform their current process. In this evolving sphere, the banking, finance, and insurance industries are taking best possible advantage of AI and machine learning. Here, we will analyze some of the prominent applications of AI and ML in banking and finance.

INTRODUCTION:

“Machine intelligence is the last invention that humanity will ever need to make.”

Nick Bostrom

Artificial intelligence is a reality today and it is impacting our lives faster than we can imagine. It is already present everywhere, from Siri in your phone to the Netflix recommendations that you receive on your smart TV. The revolution brought by Artificial intelligence has been the biggest in some time. There is no denying that it has already become a crucial and integral part of our life.

AI & its relevance to Banking

In recent years, if Artificial Intelligence has impacted one industry more than any other, it’s the Banking industry. For organizations working in the banking industry, it has become increasingly crucial to keep up with competition, and increase their standing as an innovative company. The following graphic shows reasons for its widespread adoption in Banking & Financial Services.

Artificial intelligence has several applications in the banking industry.

Here are five key applications of artificial intelligence in the Banking industry that will revolutionize the industry in the next 5 years.

AML Pattern Detection

Anti-money laundering (AML) refers to a set of procedures, laws or regulations designed to stop the practice of generating income through illegal actions. In most cases, money launderers hide their actions through a series of steps that make it look like money that came from illegal or unethical sources are earned legitimately.

Most of the major banks across the globe are shifting from rule based software systems to artificial intelligence based systems which are more robust and intelligent to the anti-money laundering patterns. Over the coming years, these systems are only set to become more and more accurate and fast with the continuous innovations and improvements in the field of artificial intelligence.

Chat bots

Chat bots are artificial intelligence based automated chat systems which simulate human chats without any human interventions. They work by identifying the context and emotions in the text chat by the human end user and respond to them with the most appropriate reply. With time, these chat bots collect massive amount of data for the behavior and habits of the user and learns the behavior of user which helps to adapts to the needs and moods of the end user.

Chat bots are already being extensively used in the banking industry to revolutionize the customer relationship management at personal level. Bank of America plans to provide customers with a virtual assistant named “Erica” who will use artificial intelligence to make suggestions over mobile phones for improving their financial affairs. Allo, released by Google...
is another generic realization of chat bots.

**Algorithmic trading**

Plenty of Hedge funds across the globe are using high end systems to deploy artificial intelligence models which learn by taking input from several sources of variation in financial markets and sentiments about the entity to make investment decisions on the fly. Reports claim that more than 70% of the trading today is actually carried out by automated artificial intelligence systems. Most of these hedge funds follow different strategies for making high frequency trades (HFTs) as soon as they identify a trading opportunity based on the inputs.

![Image of Machine Learning Hedge Funds Index vs. Quartz and Traditional Hedge Funds](image)

**Fraud detection**

Fraud detection is one of the fields which has received massive boost in providing accurate and superior results with the intervention of artificial intelligence. It’s one of the key areas in banking sector where artificial intelligence systems have excelled the most. Starting from the early example of successful implementation of data analysis techniques in the banking industry is the FICO Falcon fraud assessment system, which is based on a neural network shell to deployment of sophisticated deep learning based artificial intelligence systems today, fraud detection has come a long way and is expected to further grow in coming years.

**CUSTOMER RECOMMENDATIONS**

Recommendation engines are a key contribution of artificial intelligence in banking sector. It is based on using the data from the past about users and/or various offerings from a bank like credit card plans, investment strategies, funds, etc. to make the most appropriate recommendation to the user based on their preferences and the users’ history. Recommendation engines have been very successful and a key component in revenue growth accomplished by major banks in recent times.

With Big Data and faster computations, machines coupled with accurate artificial intelligence algorithms are set to play a major role in how recommendations are made in banking sector. For further reading on recommendation engines, you can refer to the complete guide of how recommendation engines work.

**CONCLUSION:**

The most dramatic changes brought about by AI and machine learning are expected to be in trading, financial analysis and risk assessment. The speed at which decisions need to be made in these areas make it vital, and they afford a more in-depth risk assessment to help the risk analyst or underwriter to find information that may have been hidden, deliberately or otherwise, to ensure investments are the right ones. The amount of information available to analysts already far exceeds their ability to make sense of it, and only AI is fast and cheap enough to cope.
Bancassurance

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Abstract The term BANCASSURANCE means combination of two terms ‘bank’ and ‘insurance’. In the term bancassurance that insurance have started selling there product through banks. This concept is new to the Indian market but it is very widely used in developed and developing countries. It is been profitable both Bank and Insurance company. The bancassurance swot anayalsis explains about the partnership of banking & insurance. It details the bancassurance process to reach its maximum & potential. The Equal importance has been given to different components to swot tool. Bancassurance is one of the important channels for any insurer. The growth can be enhance many fold times with appropriate strategies such as swot analysis . This article explains Indian bancassurance environment in a nutshell and can be elaborated further.

Key Words Distribution channels, Customisation, Customer retention, Productivity, Loan offer

INTRODUCTION

Bancassurance is the distribution of insurance products through the banks distribution channel. It is the service can fulfil both banking and insurance needs at the same time. Banks earn more revenue by selling the insurance. It is a phenomenon where in insurance products are offered through the distribution channels of the banking service along with the complete range of banking and investment product an services.

BANCASSURANCE:

- Bancassurance is selling of insurance products by the banks. It describes the partnership and relationship between banks and insurance company. It uses the bank sales channel in the order to sells the insurance products.
- Insurance companies and Banks are undergo to tie-up and allowing banks to sell the insurance products to customers.
- Bancassurance is a package of banking and insurance services under the one roof.

ADVANTAGES OF BANCASSURANCE:

- The quality customer access.
- Improved the brand quantity.
- Enriched by the customer environment.
- The revenue diversification.
- The profitability resources utilization.

DISADVANTAGES OF BANCASSURANCE:

- The better approach and services provided by banks to the customer is there a hope rather than a fact.
- There is a such possibility of the conflict of the interest between the other products of the bank and insurance policies.

LIST SOME OF BANCASSURANCE COMPANIES:

- Birla sun life Insurance company limited.(The first BANCASSURANCE policy in India was sold by Birla Sun.
- Exide Life Insurance.
- HDFC standard Life Insurance.
- ICIC Prudential Life Insurance.

SWOT ANALYSIS

Bancassurance is one of the important channels for any insurer. The growth can be enhanced many fold times with appropriate strategies such as SWOT analysis. The scope of banc assurance can be inferred from the SWOT analysis easily.

STRENGTH

Accurate customer detail
The accuracy in customer details can do wonders. The data generated by many sources lacks accuracy. But the accuracy of data is very high in bancassurance. This helps in targeting right segment of customers for right policy. The communication address and phone number of customers are updated on time and avoids waste of time and resources in communication.

Insurance is mandatory for loans
The bank whenever offers loan bound to issue appropriate class of insurance too. It is legally mandatory for a bank to club loan products with relevant insurance.

Customized policies at lower premium
The insurance policies are customized for bancassurance channel. The statistical analysis of customer data helps to
devise rights set of policies for different customer. The features and premium of insurances products designed for bancassurance channel comparatively better then any other channel.

**Issuance of very special class insurance**
The riskily class of business will not be issued as it affects the profit of the insurer. Some of the riskily class are weather insurance cattle insurance etc, the customer approaches through bancassurance channel then the policies will be issued.

**Good number of leads to cross sell**
The bank customer can be targeted to sell insurance polices. The existing customer database can be used to generate leads. Thus the more leads ends in more sale closure.

**Services under one roof for customers**
The customer can enjoy convenience of core banking products and insurance policies under one roof. otherwise the customer needs to run around in search of different financial products to meet his needs time to time.

**Relationship based business model**
The insurance is considered as concept spelling. The sales executive cannot expect immediate sale closure. Each phase of the sales process consumes time. The bank employee can turn the rapport created as policies.

**Important source of income**
The fee-based services increases the productivity of the employees as well as the bank branch, the existing resources can be utilized to sell financial products. otherwise insurance company spend on resources. banks due to competition loses profit in core banking products and it can be compensated in selling insurance products.

**Weaknesses**
Lack of Initiatives from Bank Employees. The bank employees should sell insurance in addition to their routine works. They perceive insurance as a burden on their head without considering its benefits. They are not interested in attending insurance training and suffer without product knowledge. The initiatives to create rapport with insurance company employees are minimal.

**Dependency on insurer employee**
The bank employees are solely depending on bancassurance executive for sales. The sales executive can handhold in the initial time but not always. The executive will be given in the handful to bank branches in the aspect of bancassurance. It is difficult to manage and address all the requirements simultaneously.

**Customer orientation is less**
Most of the bank employees tend to sell the policies which can fetch maximum benefits for them in terms of commission volume. But they forget to fulfill the customer requirements. The bank employees are having profit orientation not customer orientation.

**Can only promote tie-up insurer product**
As per IRDA guidelines, an insurer can have tie-up with any number of insurers. But a bank can have tie-up with only one life insurer and one non-life insurer. Thus a bank is restricted to sell only one bank products and cannot sell multiple insurers products simultaneously.

**OPPORTUNITIES**

**Dual support model**
The customer who takes the insurance policy through bancassurance channel is expected to enjoy dual support. In other words, support from bank as well as insurance company. The scope for better customer services is higher in bancassurance.

**Growing channel of marketing**
The bancassurance generates significant proportion of premium for any insurer. The bancassurance is inevitable as it generates huge premium next to agency channel. The growth rate of bancassurance channel is exponential in recent years.

**Tax payers can be targeted**
Every year during March, the sale of life insurance reaches its peak. At that time selected customers (preferably tax payers) can be targeted for single premium policies. In a nutshell the bank employees should be prepared to allot time for insurance in March.

**Sales can be driven by new campaigns**
The insurers can devise new campaign to motivate bank employees for selling the insurance policies. The winner of each campaign can be awarded with foreign tour, gold, cash prizes etc. thus the inner urge to sell more and win can be increased.

**Scope of premium payment through EMI’S**
As per IRDA regulations, the premium for non-life insurance cannot be paid in instalments. But the banks can pay the premium to insurer on behalf of the customer and can collect premium from customers in instalments. Thus the bank can extend the comfort of premium instalments to its customers.

**THREATS**

**Insurance becomes additional responsibility**
The bank employees should sell insurance in addition to core banking activities. During the introductory phase the burden will be extreme for them. But the bank employee will be more comfortable in selling insurance as the time
progresses. The friction is more in the initial phase of the bancassurance tie-up. Those successfully completes the first phase can really excel in selling insurance.

**Rapport maintenance between employees**
The rapport between bank employee and sale executive is affected by variety of factors. Some of the important factors are: the initiatives taken by bank employees and executive, meticulous planning and allocation of time for selling insurance, the number of branches under the supervision of executive etc. for example, if an executive is allotted with more number of banks then the rapport level with each bank employee is limited due to lack of time.

**Brand equity and poor services**
Generally, out of bancassurance tie-up, the brand equity of the insurer is improved. But the poor insurance service may dilute the bank brand equity. So the bank needs to analyze the insurer carefully before tie-up. Otherwise poor insurance service may hinder the sale of core banking products.

**Competitive quotes from others**
Sometimes, the premium quote of other channels is comparatively lower than the bancassurance channel. More specifically, the direct marketing motor premium is cheapest one. In such cases, the customer prefers to buy from the channel which charges the lowest premium.

**New banc assurance proposals**
The bancassurance channel has limited contractual term and can be renewed subsequently. Generally, each bank receives invitation from insurer to become bancassurance channel partner. If bank gets profitable contract than the current one then the present tie-up will come to an end.

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<thead>
<tr>
<th>STRENGTH</th>
<th>WEAKNESSES</th>
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<tr>
<td>Patients, quality processes and procedures</td>
<td>Poor quality of goods or services damaged reputation</td>
</tr>
<tr>
<td>New, innovative product or service</td>
<td>Competitors have superior access to distribution channels</td>
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<td>Location of your business</td>
<td>Location of your company</td>
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<tr>
<th>OPPORTUNITIES</th>
<th>THREATS</th>
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<tr>
<td>Developing market</td>
<td>A new competitor in your own home market</td>
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<tr>
<td>Mergers, joint ventures or strategic alliances</td>
<td>Price war, competitor has a new innovative substitute product or services.</td>
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<tr>
<td>Moving into new attractive market segments.</td>
<td>New regulation, increased trade barriers</td>
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<tr>
<td>Removal of international trade barriers.</td>
<td>A potential new taxation on your product/services</td>
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**CONCLUSION:**
It is important for an insurer to understand the merits and demerits of bancassurance channel. It helps immensely to plan the resources in accordance with the channel requirement. In other words the contractual terms etc can be planned to maximize the channel effectiveness. Otherwise smooth functioning of bancassurance channel is difficult. Thus the analysis of internal and external environment of bancassurance channel is a vital one for an insurer.

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Digital Transformation in Banking – The Future of Banking

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ABSTRACT: Digital Transformation is far beyond just moving from traditional banking to a digital world. It is a vital change in how banks and other financial institutions learn about, interact with and satisfy customers. An efficacious Digital Transformation begins with an understanding of digital customer behavior, preferences, choices, likes, dislikes, stated as well as unstated needs, aspirations etc. And this transformation leads to the major changes in the organizations, from product-centric to customer-centric view. A study by CGI entitled, Understanding Financial Consumers in the Digital Era sheds some light on the desires of today’s digital consumer. Interestingly, at a time when financial institutions seem to be in a lock-step with each other, consumers are raising the bar on their expectations. And, according to the study by CGI, they are willing to leave where they currently bank if their needs are not met.

The most effective way to understand and bring the organization from traditional banking to digital banking is Omni-Channel approach. Omni-channel is a multichannel approach to customer service where all the channels are tightly integrated, keeping customer in the center of the integration. As customers continue to change their channel usage patterns, banks and credit firms need to focus on delivering a seamless customer experience across various touch points. More than just an axiom, Omni-channel banking is a prospect to take bottom-line on higher note by gaining insights from customers’ channels, behavior and preferences. Today’s customers are more sophisticated and tech savvy, and to cater to their specific needs, each customer needs a unique experience from banking. They want the companies to understand their unstated needs as well as their likes. So, it should come as no surprise that these customers are expecting similar kind of response and service from banking institutions too. From researching new services, opening an account, checking balance, conducting transactions, loans, credits, wealth management, customer support, delivering an Omni-channel experience has become a key to success in this competitive market place.

INTRODUCTION

Banking industry is going through a phase of commoditization. In today’s scenario, differentiated and delightful customer experience has become more important than just providing financial services. To grab a bigger piece of the cake, banking industry has to understand the unstated needs of the customer the way airlines understands the preferences of the frequent flyers or the retailers understand the likes/dislikes of their customers, without even taking direct feedback of the customer. Each and every day, new devices/technologies are providing various customer touch points. Every time customers touch a computer or a screen, they are providing an information trail and its bank’s’ responsibility to understand how they use this trail to move their bottom line upwards. Traditionally, banks spent most of their efforts, time and money on transaction execution, which is nothing but has become a very basic feature of their overall service. While providing expedient, consistent and precise transaction processing ability is still critical, we believe that banks can learn from how retailers see the customers’ journey through an Omni-channel lens. Banks now need to rethink the way customers are being valued, may be from the angle of the industries that greatly value customer experience. A tightly coupled multichannel may provide a share of customer’s pocket, but successful implementation of Omni-channel can surely increase the size of the share though competitive advantage and also can help them to retain the same share for a longer period of time. Millionaires aren’t the only ones who want to bank whenever or wherever they want, irrespective of the branch location or the business hours. Customers from all generation, income groups, and countries could make a transaction online one day, and another day, the same transaction through mobile or ATM – or they could start a transaction on any of these channels then continue on another and finish it on different channel. Multichannel gives the flexibility to hop between channel, but not the continuation of the transactions among multiple channels. So, this represent a remarkable challenge for the financial institutions, which are often involved in multiple types of banking such as retail, finance, corporate, mortgage etc...
NEED FOR OMNI – CHANNEL

As of today, various channels are working in their silos, but it's time to break their silos and renovate the banking experience by instigating Omni-channel strategy. This approach is based on a single brand name, providing customer centric experience to each and every customer as per their preference and behavior just like an individual bank for every customer and so smoothly transacted that it becomes seamlessly embedded in the customer’s lifestyle. Various channels, but not limited to, which are the part of the Omni-channel:

Branches: Up to 65 percent of customers prefer the branch for rich advice and personalized attention

Mobile: 32 percent of the U.S. customers currently bank using their mobile devices

Video: More than one-quarter (28 percent) of customers value video access to remote experts

Social Media: There is emerging interest in tapping the power of social media like Facebook and Twitter to deliver financial services like making deposits

ATMs: Within more streamlined branches with a smaller footprint, ATMs can typically outnumber traditional tellers

CURRENT PROCESS

Initially, customer logsins to its bank’s website and looks at the current assets and liabilities. Based on various analytics algorithms, bank suggests many investment options as well as borrowing options as per the eligibility. Customer’s portal also gives a brief picture of the current financial market and its impact on the customer’s current financial position. In case customer wants to go ahead with any of the investment suggested or borrowing options and he/she can have a look at the brochure and get in touch with the customer representative for taking the process ahead. This process involves a lot of manual intervention in terms of converting suggestion/decisions into real investments, which also takes a lot of time.

LIMITATIONS OF CURRENT PROCESS;

- Individual portal for one bank
- Borrowings and investment options as per assets and liabilities only
- Manual user credentials
- Personal interaction with client rep for investing or borrowing

BENEFITS OF NEW PROCESS AND DIFFERENTIATION;

- Single portal for one client
- Borrowings and investment options as per choice, likes, needs, behavior, market conditions
- Finger print / Retina scan login
- One touch processing for borrowing / investing

ENHANCED PROCESS

The customer logs into his personal portal which keeps him in the center and shows all the connected links as finance, medical history etc... Finger print / Retina scan helps easy login and enhances the security of the data. After selecting “Finance” option, the user sees his total assets and total liabilities, which is further broken into various instruments with various institutions. Based on the user’s behavior on social sites, various searches, likes and dislikes, the system shows the borrowings and investment options. The System also shows the current market situation and how the changes in the markets are affecting the financial strength of the user. It also shows how the changes in the market will impact user’s financials and what can be the proactive measures which can be taken. System shows the risks and threats attached with the various options. Once the user want to go ahead with any of the borrowing or the investment option suggested, he looks into the product/service brochure and takes a quick decision. One touch on buying option helps to go ahead. This process works same as on tablets, smartphones and surfaces too. Even if the user starts the process in any of the channel, he/she will be able to continue the same on another channel without repeating any of the previous steps except logging into the system.

TECHNOLOGY

Big data analytics and cloud: Data is obtained from customer posts on social networking platforms, websites, past purchases, and browsing history. Data collected by tracking email ids that customers use to log in to and access social networking sites is linked to the email ids they use to register on the website. Various investing options browsed and liking behavior towards any specific sector or company should also be taken into account. Using big data analytics, this data is processed and used to generate recommendations for customers when they log in to the website/mobile app/digital display. Software, which can pull product reviews from social networking sites or review given by financial experts, is used to display reviews in the review section of the website. Database management software is required to record data obtained about customer activity/interaction and processed data. This software is linked with the cloud, so that the data can be accessed from anytime, anywhere. The cloud server also needs to store information about the availability of
products and their locations.

**Mobile app/surface:** These platforms can help browse through catalogues, check availability and accessing current status of the finance, buying any product, getting intelligent suggestions, etc...

**Biometric:** Biometric credentials cannot be lost, stolen or forgotten. Also it cannot be socially engineered, shared or used by others. There is no requirement of remembering the password or PIN. Also, it's always available with the respective individual. It provides highest levels of security and assurance of safety. Although biometric provides highest level of security, it is not as easy to implement as normal username and, password. Also, it brings high cost of implementation along with care, which needs to be taken care since its implementation will is always going to be with another system / software.

**SERVING WHAT IS BROWSED NOT ONLY ASKED:**
Visual representation of the enhanced process shows how the financial institutions representative will be able to serve customers’ unstated needs based on the searches performed by the customer on internet before even raising the query:

- 26 percent of consumers say that they would leave their current bank if advisers and personal advice were eliminated from their bank branch
- 83 percent of consumers say they would be somewhat or highly interested in bank branches that offered an expanded portfolio of financial and advisory services (legal, accounting, tax, and insurance)

**CURRENT PROCESS**
The user does a basic search on the internet for buying any financial product and post that, raises a query or request with the bank for further information. User raises the query, either through website or calling up the customer care. Based on the query and field of the query, a customer representative forwards the call to the specific department and arranges a meeting with the user. The user, then, selects either video conference with the expert or the physical meeting. Before the meeting, the bank’s representative reviews user’s financial strength and income statements etc... to provide a better solution. For multiple fields’ query, the user decides whether to have all physical meetings or video conferencing. Post reviewing all the suggestions user accepts or rejects the suggestion. If any of the suggestion is accepted then the representative goes ahead with the paper work and other formalities.

**LIMITATIONS OF CURRENT PROCESS:**
- Personal assistance from bank's perspective is must
- Separate meetings for various products
- User need to track all products separately
- Bank's suggestion based on only user's financial strengths
- Service based on user's stated needs

**BENEFITS OF NEW PROCESS AND DIFFERENTIATION:**
- Virtual tour of the products as well as virtual human assistance
- One interaction for all the products view
- Attachment of products to user's portfolio for easy tracking
- Bank's suggestion based on user likes, dislikes, behavior, various searches, financials etc before even getting the user query

**ENHANCED PROCESS**
User does a basic research on internet for buying any financial product. When the user is ready to buy the product, he/she reaches out to the bank though website/mobile/face to face. Before the user even states the query, representative keeps in front of him, the possible products’ info in which user has interest and was getting information through various channels. Bank’s representative gets this information through Omni channel presence which gives the user’s insights to the representative for providing better services. The user will be able to select any one or multiple methods of the interactions (Virtual human, video conferencing, physical meeting) where bank’s representative will have the possible questions which the user might ask and the details which user might be looking for. In this single meeting, the user will get the knowledge about any or all of the products as per the user’s choice. If the user accepts and wants to go ahead with any of the suggestion, then the bank’s representative (virtual or physical) will take the process ahead. Here, the user will provide the credentials (finger print, retina scan) to take the process ahead and attach this new product/portfolio to his/her personal portfolio to make the tracking easy.

**TECHNOLOGY**
**Big data analytics and cloud:** Data will be collected from user’s web searches, social networking sites, experts review about the various financial products, past interests in the financial products or portfolio. Then this data will be connected with the financial strength of the user once the user places the request and based on the defined algorithms suitable products will be kept in front of the user. As the whole process will be automated, in just one meeting, the user will be able to get the overall picture of...
all the products. As the whole data will be on cloud, linking these products with user’s personal portfolio will make the job easier an easy job and the customer will be able to access the data anytime, anywhere.

Smart Phones/surfaces/tablets: These products will be used to raise requests and also, provide assistance. The user will be able to review the portfolio of the products. Linkage with the personal portfolio will show impacts of markets up/down and opportunities & threats too.

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INTRODUCTION

A sound and effective banking system is the backbone of an economy. The economy of a country can function smoothly and without many hassles if the banking system backing it is not only flexible but also capable of meeting the new challenges posed by the technology and other external as well as internal factors. The importance and role of information technology for achieving this benign objective cannot be undermined. There is an urgent need for not only technology upgradation but also its integration with the general way of functioning of banks to give them an edge in respect of services provided to the customers, better housekeeping, optimizing the use of funds and building up of management information system for decision making. The technology has the potential to change methods of marketing, advertising, designing, pricing and distributing financial products and services and cost savings in the form of an electronic, self-service product-delivery channel. The technology holds the key to the future success of Indian Banks. Thus, “Electronic Banking” is the need of the hour, which cannot be lost sight of except at the cost of elimination from the competition. The existence of Electronic banking also becomes inevitable due to the standards required to be matched at the international level. Thus, the domestic as well as the international standards mandates the adoption of Electronic banking at the earliest possible moment.

In India, from the early 1990's, electronic banking is gaining in popularity as an important distribution channel to provide banking services. This direction is being taken by the banks to differentiate their services to the consumers to gain their loyalty. The strategies adopted by the Indian banks to survive the increased competition are the focus of this study.

Technology is enabling banks to provide the convenience of anytime-anywhere-banking. Banks are now reengineering the way in which their services can be reached to their customers by bringing in flexibility in their “distribution channels”. The earlier brick-and-mortar branch is no longer sufficient; technology is now taking banks to the homes or offices, 24 hours a day, 365 days a year through ATMs, phone banking and PC banking. The financial supply chain is undergoing a fundamental strategic change.

PAYMENT INNOVATIONS:

Blockchain Technology
Blockchain technology is set to fundamentally transform banking and financial services. It decentralizes financial management from a central authority to a widespread network of computers. Financial transactions are broken down into encrypted packets, or “blocks,” which are then added to the “chain” of computer code and encrypted for enhanced cybersecurity — it’s been compared to “email for money” by blockchain startup CEO Blythe Masters. Because the technology has the potential to improve numerous facets of banking — and is the basis for other banking technology trends like Bitcoin — it’s no longer a question of if blockchain will change the banking industry, but when, according to the Wharton School of the University of Pennsylvania.

Upgraded ATMs
ATMs transformed the banking system when they were first introduced in 1967. The next revolution in ATMs is likely to involve contactless payments. Much like Apple Pay or Google Wallet, soon you’ll be able to conduct contactless ATM transactions using a smartphone.

Some ATM innovations are already available overseas and might reach the U.S. shortly. For example, biometric authentication launched last year in India, and iris recognition is in place at Qatar National Bank ATMs. These technologies can help overall bank security by
protecting against ATM hacks.

**Proliferation of Non-Banks**

Banks are hoping that technology will allow them to deliver a faster, more transparent experience to consumers. A large portion of their resources, however, is necessarily dedicated to security, compliance, and other industry-specific requirements, which has allowed non-banks — or financial service providers that are not regulated by the banking industry — to flourish, according to a 2016 report from market intelligence firm Greenwich Associates. Since these companies can devote a greater percentage of their assets to cutting-edge financial technology, they might be able to innovate more rapidly than traditional banks, attracting tech-savvy customers in the process.

**Automated Financial Services Employees**

The rise of financial technology will likely result in the reduction of in-bank personnel. A 2016 report from Citigroup indicated that a whopping 30 percent of bank jobs might be lost by 2025 due to the automation of retail banking services. Even behind the front line, financial services employees might step aside as robo-advisers that manage your money continue to grow in popularity. Wealthfront and Betterment, two robo-adviser companies, already have $4.65 billion and $7.36 billion in assets under management, respectively.

**Mobile and Digital Banking**

The mobile and digital transformation in banking has only just begun and growth is already explosive. Banks are investing heavily in digital banking technology, in which customers use mobile, web or digital platforms to use banking services. In a Forbes survey on banking customer engagement from late 2016, 86 percent of banks indicated that these types of services represent their top technology investments.

**Open banking is the new norms**

Open banking—a connected ecosystem for financial and non-financial services with multiple underlying service providers—is the future of banking.

The launch of UPI by the National Payments Corporation of India (NPCI) has thrown open the gates for innovation in the open banking space. UPI will empower payment service providers to create state-of-the-art products/offerings without being limited by the underlying account relationships. Customers will be given the flexibility that they desire and a unified interoperable interface will allow all service providers to innovate for better customer experiences.

**Banking on the cloud first strategy**

Progressive banks are already making strides in cloud adoption. Disruptive technologies that are changing the face of business—Big Data, blockchain, artificial intelligence (AI), IoT—will be leveraged using cloud computing. Indian banks are coming around to the idea that the business agility provided by cloud outweighs the concerns. Business models for emerging banks and fintechs will also be largely driven by the cloud-first strategy.

In 2017, you could expect Siri to help you move funds and open a new fixed deposit account with your bank.

Demonetisation is pushing India towards a cashless society, and as banks prepare to deal with the increased influx of electronic transactions, cloud will provide banks with the required elasticity to meet these demands.

**Blockchain and the race to production**

As banks try to become more efficient and agile to meet the increasing demands of customers, blockchain will be one of the enablers for re-imagining processes. In 2017, banks will increasingly move some projects from pilot to production and leverage blockchain to automate inter-organisational processes. The recent Emirates NBD and ICICI Bank partnership to launch a blockchain pilot network for international remittances and trade finance is a precursor for advances in this technology.

**Artificial Intelligence**

From sci-fi to reality Artificial intelligence (AI) has the potential to transform both front office and back office operations with its self-improving programs—at ICICI Bank, for example, software robots have been deployed in over 200 business process functions, reducing the response time to customers by up to 60%. AI has already proven itself in providing seamless differentiated customer experience on digital channels, and security measures with its integration within the banking infrastructure. Intelligent digital assistants are commonplace, and these self-learning programs keep getting better with every interaction.

As 2017 progresses, banks will look to explore more proof of concepts to integrate conversational interfaces into their omni channel strategy.
Banking architecture simplification
All of these overlying technologies will be built on the bedrock of banking architectural simplification. The new year will see banks move to componentisation instead of the traditional monolithic architecture. In other words, complex architecture will be broken up into smaller bite-sized pieces for ease of deployment and upgrade for specific functionalities. Componentisation will not only increase agility to modernise selectively to keep pace with current technology trends, but also allow for risk-mitigation of projects. Banks will simplify architecture by implementing enterprise-class applications, which will be able to deliver capabilities required across business units and eliminate silos that currently exist.

With initiatives like demonetisation, the Indian government has made it clear that India will be yanked away from a cash-based economy. GST rollout will give further impetus to the Indian economy. In 2017, banks will not only have to keep up with the growing expectations of a billion connected customers, but they’ll also have to make sure that they are leagues ahead of the emerging competition.

Faster remittance facilities
Electronic Fund Transfer (EFT) has accelerated the movement of funds across the world. E-cash plays as cyber cash plays a predominant role in business world. SWIFT (Society for World Wide Interbank Financial Telecommunication) is a classic example of EFT. The reasons for the success of an EFT system are speed, reliability, security and accuracy. It is an efficient mode of fund transfer across various banks. It significantly reduces the number of outstationcheques issued by customers. Consequently service load on bank could be reduced over a period of time. Further this technique makes reconciliation automatic.

Automatic teller machine
ATM called electronic equipment allows card holdings customers to perform routine banking transactions without interacting with a human teller. It offers a range of services of modern banking namely deposit taking, cash withdrawal, and account balance verification etc with the help of Personal Identification Number (PIN) system. It offers round the clock banking services to customers. It is safe with an electro-mechanical input and output system which is itself controlled by a fully electronic user interface. It prevents an unauthorized user of the card from gaining access to the machine’s functions.

Telephone Banking
Of late, this product introduced initially by a few foreign banks has started attracting the fancy of the urban customer for the sheer convenience of the facility. Any branch of a commercial bank which has computerised its operations should be able to offer this facility to its customers with the help of suitable software for this purpose. Digitization of voice has enabled the introduction of this technological marvel. Elsewhere, organizations such as Airline, Indian Railways etc have already implemented voice response system based on this technology. Facilities offered through telephone banking can include a range of services such as balance enquirers, enquiries about collections or specific credits / debits, transfer of funds, request for statements of account or account opening forms etc. Telephone banking services by the foreign banks include a wide spectrum of services such as opening accounts, ordering for demand draft etc. such services, however, would include a suitable levy towards service change. Telephone banking is appealing to the urban customers who faces several constrains in day-to-day livings such as transport bottlenecks, traffic jams, non-availability of time to visit the branch, etc.

Home banking
This is an extended and versatile version of telephone banking. The customer is able to access his branch for availing a variety of services through home banking. This facility is made available through the customer’s personal computer attached to a telephone line and modem. Online banking facilities including normal transactions can be handled through this arrangement. Corporate customers can avail benefits through PC terminal and handle their documentary credit related transactions through this arrangement. The application software used this facility should incorporate security features such as encryption to protect the data over telephone lines.

Credit card facility
All major banks have introduced the credit card facility with a tie-up arrangement with Visa or Master card. The tie-up is needed to facilitate usage of the credit card at a large number of establishments. The business credit card is handled by banks through a separate strategic business unit for better focus. Branches serve as marketing outlets. They act as collection agent for credit card dues of the customer. As this is a high volume, low value business with potential to break even only beyond certain volume of credit card issued, dependence on technology is inevitable to keep the costs to the minimum. All services such as the issue of credit cards, the processing of transactions, issue of statements, calculation and levy of overdue interest, service charges etc are totally automated. The regional offices of the credit card unit located at metros and major centers provide on-line validation of merchant transactions. This is helpful in preventing fraudulent transactions. A combination of Smart Card technology computers and communication has enabled this kind of on-line validation possible.

Personal loans
Loans such as housing loans, car loans etc are offered by private banks to prospective customers for their personal
use. Application packages for handling these products are available. Since the accounting part is totally automated, more attention can be paid on services and marketing. Some banks provide the required focus on this segment of business through their branches set up for this purpose only.

**Internet banking**

The commercial transaction through internet has increased due to widespread popularity and cost effectiveness. Banks worldwide have launched their banking sites on the Internet WorldWide Web (WWW). The main attraction of internet is the cost effectiveness. Banking transactions connected through internet have 24 hour availability. Banks can offer their market service from any part of the globe at a fractional of the cost compared to traditional marketing channels. The Internet banking services adds more value to NRI’s who can view their balance online and also effect funds transfer just at the click of a mouse. Moreover, Internet banking has no time zones. It is accessible round the clock without restricting it to any geographical boundary.

**CONCLUSION**

New technology facilities the banks to introduction of new products in banking and helps bankers in the number crunching work involved in consolidations of returns, reconciliation etc. However, the rate of success of these new products will depend on the suitability of the technology selected for introduction in banks. Besides, well trained in house manpower, proper succession planning of staff and planned implementation strategy supported by adequate marketing thrust will facilitate the success of these products. In a net worked environment involving telecommunication lines, the computer security issues assume a more critical dimension. A well defined computer security and audit plan will ensure the long term success of IT plans of banks.
ABSTRACT  E banking is a product designed for the purposes of online banking that enables you to have easy and safe access to bank account. E banking is a safe, fast easy and efficient electronic service that enables you access to bank account and to carry out online banking service 24 hours a day 7 days a week. It involves information of banking through technology way. Under this technology method, the banking services are delivered by way of a computer controlled system. This system does involve direct interface with the customers service. The customers do not have to visit the banks premises. But banking system needs more secure and reliable because each and every task performed is related to customer’s cash.

Keywords: Internet banking software, time consumption, transaction of money, reduction of work

INTRODUCTION:
Electronic funds transfer means computer systems are used to perform cash transaction electronically. The EFT is used for electronic payments and customer transaction where the cardholders pay using credit or debit cards. It is the most convenient way to send money and receive at any time, any place at any convenient. Online banking is also known as internet banking, e banking or web banking. Now a day the internet banking is moving through smarts phones and other applications. Internet banking is used in various sectors, industries and institution to transact the money from one account to another account. This type of banking saves times of the customer who are not able to come over to bank to depositing and transaction the money when they are in need. Buy the use of internet banking we can known update of our bank account and other details of our account.

MEANING
An online banks offer customer just move easily through a local branch including deposits, online bill payment and transaction via internet. It handles customer service through phones, email or online chat. Banks are frequently performed on the mobile devices like WIFI and 4G networks. Internet banking convenient to easily access from at any place, any time and at your convenient. By avoid queue, last minute transactions and deposits they online banks are useful for emergency purposes. It is easy and safe banking transaction done through online from any of our cost. You can check balance, transaction, transfer fund, pay bills open fixed and recurring deposits and much more are update on your mobile. Online banking enables bank customer to manage account and transactions money directly with bank through internet. So it called as internet banking. Customer can able to access bank of their account through an internet connection using website bank. Online baking has made personal and business banking faster more efficient and safer.

EVLOUTION OF BANKING:
The most recent technological advancement is the evolution of e banking various alternative modes of providing banking products are evolved and gained popularity in recent past such as tele-banking, automated teller machines, e banking , credit & debit cards. The most recent one is e banking that has major impact on the financial market. Banks got the sense that internet facility will open up new horizons for bank and will help them to adopt globalization effectively.

DEFINITIONS
Electronic banking can be defined as the use of electronic delivery channels for banking products and services, and is a subset of electronic finance. The most important electronic delivery channels are the internet, wireless communication networks, automatic teller machine and telephone banking. Internet banking is a subset of e banking that is a primarily carried out by means of the internet. The term transactional e banking is also used to distinguish the use of banking services from the mere provision of information.

Electronic banking or e banking, includes the provision of retail and small value banking products and service through electronic banking channels as well as large value electronic payment and other wholesale banking service delivered electronically.

Sometimes internet banking is defined as a subset of pc banking, which also includes online banking. In contract to internet banking, online banking refers to bank transaction within closed networks.
FEATURES OF INTERNET BANKING
- Check Account Statement
- Transfer Funds
- Open a Fixed Deposit
- Pay Utility Bills
- Recharge prepaid mobile \ DTH and a lot more.
- Buy general insurance
- Pay taxes
- Order check book
- Track your deliverables
- And many more financial and non financial services.

BENEFITS INTERNET BANKING
E banking served so many benefits not only to the bank itself, but also to the society as a whole. E banking made finance economically possible
- Lower operational costs of bank
- Automated process
- Accelerated credit decisions
- Lower minimum loan size to be profitable
- Lower cost of entry
- Expanded finance reach
- Increased transparency

FUNCTION OF ONLINE BANKING
- Transactional (such as account to account transfer, paying bill, wire transfer, apply for loan, new account, etc.)
- Payments to third parties, including all payments and telegraphic/wire transfer.
- Funds transfer between a customer’s own transaction account and saving accounts.
- Investments purchase or sale.
- Loan applications and transactions such as repayments of enrolments
- Non-transaction (eg: online statements, cheque links, cobrowsing, chat)
- Viewing recent transactions
- Downloading bank statement for example in PDF format
- Viewing images of paying checks
- Finance institution administration
● Management of multiple users having varying levels of authority
● Transaction approval service

ADVANCEMENT INTERNET BANKING
● It saves time spent in banks
● It provides ways for international banking
● It provides banking throughout the year 24/7 days from any place have internet access
● It provides well organized cash management for internet optimization
● It provides convenience in terms of capital, labour, time all the resource needed to make a transaction
● Taking advancement of integrated banking service, banks may compete in new markets, can get new customers and growth their market share
● It provides some security and privacy to customers, by using state of the art encryption and security technologies

DISADVANTAGES OF INTERNET BANKING
● It’s easy to see the benefits of internet banking. Its easy, convenient and unlike a banks physical location, the internet doesn’t abide by any business hours.
● Further, you can make instant transfers between accounts, pay bills electronically to save postage, and you can access your bank account from anywhere, as long as you have an internet connection.
● But despite all the pros associated with online banking, there are some disadvantages and risks associated with it as well.
● Most banks make sure that their websites are secure, but no bank website is immune from cyber crime. Hackers target bank websites to know about personal information of your account.
● ATM one of disadvantages of online banking relates to withdraw cash. You can withdraw cash limited per day. You should share OTP number or password to others.
● Its today’s busy world, when people do not have much time spend for personal work, online banking appears as a boon. They believe their accounts accessed by their user name and password. It’s easy way for hackers to hack their account without knowing to banks and users.
● Personal relationship with the staff at the banks comes handy when requesting for faster loan approval or a special service which may not be available to the public.

OBJECTIVE OF STUDY:
● To study the role of E-banking
● To analyze the awareness and usages of internet banking by customers
● To identify strength and weakness of it and reasons of that
● To suggest the appropriate measures to increase the use of internet banking by customers

CONCLUSION:
The e banking plays vital role in the life of each individual user of e-banking. The internet banking is used by various bank customers for transaction, withdraw deposits and for many purposes. Now days each individual does the bank transaction and they can check details with in a fraction of second and can have a clear view of saving accounts of the customers. So they bank make customer to do their work from convenient from at any place any time and their convenient. Today’s world online network is boon to the society. At same time you can analyze drawbacks of website as like other sector but it useful for user who not get time to handle their personal work in time. So internet banking can be boon to the society.
Electronic Payment System

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Abstract With the explosive growth of the Internet, electronic-commerce (e-commerce) is an increasingly important segment of commercial activities on the web. The Secure Agent Fabrication, Evolution and Roaming (SAFER) architecture was proposed to further facilitate e-commerce using agent technology. In this paper, the electronic payment aspect of SAFER will be explored. The Secure Electronic Transaction (SET) protocol and E-cash were selected as the bases for the electronic payment system implementation. The various modules of the payment system and how they interface with each other are shown. An extensible implementation using JavaTM will also be elaborated. This application incorporates agent roaming functionality and the ability to conduct e-commerce transactions and carry out intelligent e-payment procedures.

INTRODUCTION

Commercial activities on the Internet have increased in tandem with the fast growth of the Internet itself. With electronic commerce (e-commerce), business transactions have been made easier and faster via the Internet. However, there are still uncertainties and lack of standardized e-commerce procedures. This has slowed down the acceptance of e-commerce activities online. It would thus be beneficial if there was some way to streamline and standardize e-commerce.

Agent technology was introduced to e-commerce to provide automation in conducting business transactions. Agents can perform tasks autonomously on behalf of its user. Hence, an agent framework and administration infrastructure called SAFER (Secure Agent Fabrication, Evolutionand Roaming) has been proposed (Zu et al, 2000; Guan and Yang, 2002; Wang et al, 2002; Guan and Zhu, 2002; Ng et al, 2002; Sim and Guan, 2002; Yeo et al, 2002; Wang and Guan, 2000). The goal of SAFER is to construct open, dynamic, and evolutionary agent architecture for e-commerce.

This solution makes use of software agents to carry out product search and differentiation on behalf of human owners. It has the potential to allow e-commerce transactions and payment to be carried out with good security and reliability.

This paper will elaborate on the design of a modularized payment system for SAFER. It will give an idea of the various technologies used in the implementation process of the payment system for SAFER. The background of the research will first be introduced in Section 2 including agent technology, and current payment schemes. An overview of the SAFER payment system is presented in Section 3. The modular design of the implemented Java application is then given in Section 4. In Section 5, a discussion of the implementation is included. The advantages of the design are discussed and possible technical considerations are explained. Comparison to related work is covered in Section 6.

AGENTS AND E-PAYMENT SYSTEMS

Agents are bits of software that help computer users by performing routine tasks, typically in the background on behalf of its user. Information gathering, filtering and presentation are some well-defined tasks prescribed to agents. Traditional software such as word processors and spreadsheets only respond to human input in a fixed and predictable manner. Intelligent agents are capable of "thinking" and producing intelligent feedback.

Electronic Payment Schemes

A key element in any e-commerce system is the method of payment. However, existing monetary and fund-transfer arrangements are difficult to be transplanted directly into the e-commerce marketplace. Currently, a common e-payment method involves the client transmitting to the merchant details of a payment card such as a VISA credit card. The merchant receives the information and proceeds to carry out a payment request with the card issuer via traditional payment card procedures. This system is simple and does not require the development of a new commercial infrastructure. However, the system is susceptible to frauds from either transacting parties. The card information transmitted over the Internet could also be stolen by malicious parties. Many electronic payment schemes have been proposed but not all of them offer solutions to these problems. One research project called BABSy proposed by Rockinger and Baumeister (2000) is based on the consumer buying the behavior model listed in the next section. It is claimed to be an accounting system that helps automated payment in an agent based e-commerce environment. In BABSy, there are only three types of agents which represent the three parties involved in an e-commerce transaction: merchant, bank and user. They are service agent, accounting agent and user agent.
According to the nomenclature, the model (Figure 2) is separated into six stages, namely:

1. Need Identification
2. Product Brokering
3. Merchant Brokering
4. Negotiation
5. Payment and Delivery
6. Product Service and Evaluation

These stages may overlap and migrate from one step to another in a non-linear and iterative way. The model helps provide a solution to identify the role of agents as mediator in e-commerce. However, there is no automated system today with all these stages. Some pilot research projects assist various stages of the buying process.

For example, an agent market place system called Kasbah (Chavz and Maes, 1996) was implemented by the MIT Media Lab using multiple agents that are intended to bring about changes in the way buying and selling is conducted and doing much of the work on the user’s behalf. Buyers who need to procure particular goods would create an agent, give it basic strategic direction, and send it off into the electronic marketplace. The Kasbah agents would then pro-actively seek for potential sellers and negotiate with them on the buyer’s behalf, based on a set of constraints specified by the buyer, including a highest acceptable price and a transaction completion date. However, it is clear that it only covers some aspects of the buying process, i.e. from stage two to four as listed above. It does not support the payment stage in their systems. Here, we propose a modularized electronic payment system for agent-based e-commerce, especially for the SAFER architecture. It combines the agent technology with current payment schemes described in the previous section. The SAFER payment system does not limit itself to a fixed method for electronic payment. The payment functionality of agents or the Agent Butler is extensible and will be able to handle different forms of payment such as payment card or digital cash, etc. For the current system implementation, SET and E-cash were chosen as the payment schemes.

SAFER ELECTRONIC PAYMENT SYSTEM

In Section 2.1, we presented an overview of the SAFER community. Here, we discuss in detail the entities involved in the SAFER e-payment system under an agent-based SET protocol

The Agent Butler represents the Cardholder who makes payment using a payment card through the SET (or E-cash) protocol. The Agent Butler resides in the user’s PC as a static user agent and has a number of functions pertaining to agent management and e-commerce. Firstly, the user interacts with the Agent Butler through the Agent Butler User Interface. Also, the Agent Butler can dispatch

Agent Based E-Payment Systems for E-Commerce

To categorize existing agent-mediated e-commerce systems, a Consumer Buying Model was presented by Maes’ in the MITMedia Lab (Guttman and Maes, 1998).
Mobile Agents to remote e-commerce hosts using the Agent Transport module. It receives messages and shopping information from dispatched agents through its AgentReceptionist. Finally, it carries out e-commerce transactions and payments through its Financing Agency.

**DESIGN AND IMPLEMENTATION OF A MODULARIZED ELECTRONIC PAYMENT SYSTEM FOR THE SAFER ARCHITECTURE**

**Agent Butler**
Agent Butler plays a significant role in the whole architecture, especially in the payment transaction process. It has a number of functions that can be categorized into two major roles namely: 1) roles with the owner and 2) roles with the user. The first major role is its task with the owner. In the absence of its owner, the Agent Butler will, depending on the authorization given, make decisions on behalf of the agent owner. The stationary Agent Butler provides a Graphical User Interface (GUI) for accepting data input and displaying the results of a specific task to the user instantaneously.

In the second major role, the Agent Butler can dispatch mobile agents to Web hosts to carry out e-commerce activities. When mobile agents are sent out roaming in the network, the butler has the responsibility of keeping track of agent activities and locations by sending and receiving messages with agents. This is especially important when an agent’s task is important. Agent Butler is unnecessary in all agent transactions, because in SAFER, mobile agents won’t be given the authorization to carry big amounts of credits/E-cash.

**Mobile Agent**
The mobile agent’s task is to assist in the initiation of electronic payment for the purpose of e-commerce between the Agent Butler representing the owner, and the host site. Figure 9 shows the class modules that comprise the Mobile Agent object. In the centre is the Mobile Agent class, which controls the rest of its components. It can be regarded as a coordination centre without external functions. It contains details about each agent such as ID, date of creation, information about the originating host, etc. All these identity details arise from the need to be compatible with the SAFER architecture. This means that the agents are not just anonymous byte-code flowing around, but possess specific capabilities and unique identification to be residents of the SAFER communities. See Appendix III for details in the implementation of mobile agent.

**Agent Communications Module**
The agent has a communications module that allows the agent to communicate with the Agent Butler or other SAFER community entities. The Agent Communicator object establishes a link with a non-external communication entity and then transmits the information as a Message object. The AgentListener listens at a specific port for an external connection request to initiate mutual messaging.

**Agent Activity**
When the agent reaches the host, it will be activated by the host. The activated agent can carry out a variety of pre-defined tasks while it is alive. It can communicate with the Agent Butler, access local product databases, process obtained information or return to the Agent Butler according to its TaskList. Every task would have an assigned priority and the required task parameters. For example, if the next task is to contact another agent, the ID and address of the other agent would be available. The TaskList (Figure 9) object is created and input by the Agent Butler to the agent before dispatch. The agent attempts to fulfill every task in a sequential manner. The flexibility of such an approach is that different types of tasks can be created by the Agent Butler. The parameters of a type of task can be varied according to need. Each task is specified based on some pre-specified sub-tasks in a finer-grain level. [accessed Feb 24 2018].

**Agent Shopping**
One of the primary possible tasks of an agent within the SAFER framework would be to roam to remote hosting sites with e-commerce retailers. This would allow the agent to carry out product information gathering. For example, an agent that has roamed to a shopping website would be able to access the local product database using its Information Processor module. After the information from the local database has been successfully retrieved, the agent can carry out further processing on the data. For example, the agent can attempt to match the retrieved product information with a shopping list that has been set at by the Agent Butler. When product matches are obtained, the prices of the matched products could then be analyzed to find out if the price range is acceptable to the owner.

**Registration and Purchase**
When the registration commences, the registration module is activated by the Agent Butler’s Financing Agency (Figures 8 and 20). The payment card account details are used to allow CA to authenticate the Cardholder. On successful registration, the Cardholder certificates are created by CA and sent to the Agent Butler. These certificates are stored for later use. After successful registration, purchase transactions can be carried out by the Purchase Module. The product information of e-commerce host received by the dispatched agents is used to select products. The selected items from different hosts...
are entered into a combined shopping list. When a purchase is confirmed, the Agent Butler analyses the shopping list. It then simultaneously carries out purchase requests with all the hosts for items that have been ordered. Using SET-based payment as an example, the host(s) involved in the purchase transactions will invoke Payment Authorization request to the Payment Gateway when payment information is received from the Agent Butler. It stores the returned payment capture token. The host then proceeds to conclude the purchase request with the Agent Butler. At a suitable time, the host will then carry out the actual Payment Capture with the Payment Gateway using the previously stored capture token.

E-cash Payment
As shown in E-cash is realized by an E-cash object. Serial Number is simulated as a randomly generated 50-digit numeric string. Value denotes the value that this E-cash object represents. Signed denotes whether E-cash has been certified by the bank server. Expiration Date denotes the expiration date of E-cash.

An electronic wallet class is implemented in a local environment, which could be used to manage, generate, and store E-cash. When the owner/Agent Butler needs some cash, the electronic wallet will be activated.

Automated Payment
To automate the payment process, we have incorporated a rule-based decision capability to automate the decision process of choosing a payment agent. A simple scheme is suggested in our architecture. A set of rules is defined in a rule-base for choosing a specific payment method under certain conditions. The template of a rule base is shown in Figure 13. NumberOfRules specifies how many rules are defined in the rule base. In the template, each rule owns a unique ID, which is marked as “ (n) ” in the above figure. Additionally, each rule has four attributes, namely Priority, Factor, Condition, and Payment Method Name. The meaning of each will be clear after we go through the following example. We have incorporated a rule-based decision facility to automate the decision process of choosing a payment agent. A simple scheme is included in our architecture. A set of rules is defined in a rule base for choosing a specific payment method under certain conditions. Each rule has one factor that specifies the selection condition with certain priority denotation. Rules are validated in priority order. Once a rule is found valid, the corresponding payment method is chosen. A sample rule base is shown in Figure 14. The rule base sample defines some rules of selecting a payment method. The first rule has the highest Priority 1. The decision factor is transaction amount. This rule is valid provided that the transaction amount is less than $50. The second rule has a lower Priority 2. The decision factor is transaction amount and trusted_merchant. This rule is valid provided that the transaction amount is less than $100 and the merchant is a trusted merchant. Agent Butler evaluates all the rules defined in the rule base in priority order. Agent Butler checks whether the condition of the first rule is met. If met, Agent Butler selects SET as the payment method. Otherwise, Agent Butler continues to evaluate the next rule. If all rules are invalid, Agent Butler can report to the owner and wait for his payment decision.

SUMMARY AND CONCLUSION
This paper presents an extensible SAFER-based e-payment system suited to the requirements of agent-based e-commerce. The Secure Electronic Transaction (SET) and E-cash protocols were chosen as the payment schemes implemented. The prototype built illustrates a high degree of functionality. For instance, orders are made in a single interface window for products from different merchants. The clearly defined interfaces also facilitate the addition of new features in a single module without compromising reliability in other modules.

Additional developments of the system in the future could include the incorporation of agent security measures. Research has already been carried out in this area by other concurrent projects and the results could be used to enhance the current system. In addition, other electronic payment schemes can be implemented as additional payment modules to add to the flexibility of our framework for the convenience of users.

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INTRODUCTION:

In 1970 the Automatic Teller Machine (ATM) have important touch point between bank and their customers providing convenience 24/7 self service transactions. Over past three years a major shift has taken place in the trends of financial institutions that provide ATM. A 2012 survey of ATM software trends identified the growing customers use of smart phones in banking. While the ATM is increasingly viewed as one component of seamless approach to serving customers. ATM must get smarter as smart phone use increases for banking.

Banks and credit unions increasingly leverage ATM as tool to boost customers intentions and loyalty. Financial institutions are exploring new ATM expectations with customers.

ATM get smarter:

As Banks contend with a growing number of competitors entering the financial services market, they must be able to offer the kinds of innovative experiences but engage customers retain them and build long-term loyalty.

Along with mobile and online channels smart ATM can offer new opportunities to improve customer experience, while maximizing bank revenue

- Customize the ATM interface
- Offer an increased range in services
- Integrate ATM With mobile devices and services

Rank of ATM:

In the next 12 months 58% of financial institutions surveyed plan to:
- Add to their existing ATM fleet on
- Replace all or part of their existing ATM fleet.

Survey of ATM:

It is good thing that for bank and credit unions remain committed to local branch. In fact 91% survey respondents says the branch and still “very important” or “extremely important” as a customers touch point.

Technology is critical in moving towards customers centric banking. Financial institutions recognize that online and self – service technology is increasingly important in serving customers as well. In fact more than 80% of financial institutions use smart phone as “very important” “extremely important”.

Security upgrade:

The financial institutions upgrade their ATM to windows 7 to implement their latest patches and to maintain (payment card Industry) compliance. 32% of financial institutions surveyed are ahead of the curve with the ATM already support windows 7 while 61% of those surveyed said they planned to migrate their ATM to windows 7, Operating system in 2017. Security upgrade such as Europay / Master card or VISA on Card Integrated Circuit (IC)
Intelligent personalization: Implementing an ATM personalization strategy is less than might be expected. Software is available that makes managing operationally efficient centrally audited and remotely controlled without requiring management and testing of multiple applications. Not only does the ability to tailor the ATM transaction to individual customers create a more personal experience, but it also offers the bank the ability to deliver targeted messages to those customers.

A special ATM experience could be developed for children who are just beginning to understand the concept of savings and financial matters. Local merchants could post discount offers.

Integration with mobile devices and services: Banks and other financial institutions view the integration of ATM with smart phones as a key in the ongoing development of the ATM channel. The growing use of smart phones will lead to cardless ATM cash withdrawals in which the smart phone owner holds up this mobile phone to the ATM to complete a transaction without the need of a card. Already some banks integrate with smart phones by emailing an SMS text message that includes a temporary PIN to a mobile phone owner who has either lost or forgotten his ATM Card.

The bank customers then is able to enter the temporary PIN at the ATM to make a cardless ATM withdrawal. Others can have a bar code sent to their smart phone to complete a cardless withdrawal.

Remote Management: Financial institutions operating a large number of ATM find that management costs and time can be prohibitively expensive and inefficient. Since downtime causes the company to lose customers, prompt error handling and recovery are essential.

Benefits: The benefits of remote access management include:
- Cost savings
- Remote diagnostics
- Remote powering

More than 390 Banks and credit unions responded “THE CHANGING FACE OF THE ATM MARKET” which was concluded from April 23 2014.

Improve customers experience with remote management: Managing ATMs remotely create significant cost savings for Banks and services provide and also delivers a better customer experience. 1500 ATMs that take advantage of remote management capabilities of Intel “vPro” technology. They had experience results showing that a small inventory in technology can yield significant benefits.
- 43% Reduction in ATM documentation
- 33% Reduction in service visits

CONCLUSION:
Customers are taking personal control of their banking experience with online account access. ATM continue to play an important role in shaping customers banking experience. ATM provides pan realizing significant cost savings with remote management while smart ATMs to deliver personalized services and messages.

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Expanded ATM Capabilities

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Abstract: An automated teller machine (ATM) is an electronic telecommunications device. It enables customers of financial institutions to perform financial transactions such as cash withdrawals, deposits, transfer funds or obtaining account information, at any time and without the need for direct interaction with bank staff. Many ATMs have a sign above, indicating the name of the bank or organisation that owns the ATM, and possibly including the networks to which it can connect. In Canada, ABM that are not operated by a financial institution are known as "white-label ABMs".

According to the ATM Industry Association (ATMIA) there are now close to 3.5 million ATMs installed worldwide. The use of ATMs is gradually declining – most notably in retail precincts. On most modern ATMs, customers are identified by inserting a plastic ATM card (or some other acceptable payment card) into the ATM, with authentication being by the customer entering a personal identification number (PIN) which must match the PIN stored in the chip on the card or in the issuing financial institution's database.

An ATM, customers can access their bank deposit or credit accounts in order to make a variety of financial transactions such as cash withdrawals, check balances, or credit mobile phones. ATMs can be used to withdraw cash in a foreign country. If the currency being withdrawn from the ATM is different from that in which the bank account is denominated, the money will be converted at the financial institution's exchange rate.

INTRODUCTION:

An automated teller machine (ATM) is an electronic banking outlet, which allows customers to complete basic transactions without the aid of a branch representative or teller. A credit card or debit card can access most ATMs. The first ATM appeared in London in 1967, and in less than 50 years, ATMs spread around the globe, securing a presence in every major country. Automated teller machine have evolved as the primary delivery channel for cash withdrawls. The evolutionary trend from cash economy to cheque economy and onwards to plastic card economy is witnessed in the introduction of ATMs.

ATM or atm may refer to:
- Atmosphere (unit) or atm, a unit of atmospheric pressure
- Automated teller machine, a cash dispenser or cash machine

HARDWARE:

An ATM is typically made up of the following devices:
- CPU is to control the user interface and transaction devices.
- Magnetic or chip card reader is used to identify the customer.
- PINpad EEP4 (similar in layout to a touch tone calculator keypad), manufactured as part of a secure enclosure.
- Secure cryptoprocessor, generally within a secure enclosure.
- Display is used by the customer for performing the transaction.
- Function key buttons or a touchscreen is used to select the various aspects of the transaction.
- Record printer is to provide the customer with a record of the transaction.
- Vault is to store the parts of the machinery requiring restricted access.
- Sensors and indicators.

FEATURES OF ATM CAPABILITIES:

The ATM features are as follows:
Email receipts: Some customers take the receipt simply for a quick look at their remaining balance, while others simply expect a receipt as part of the ATM experience. After a the receipt ends up in the trash or worse on the floor.

Varying bill denominations: Most ATMs only dispensed cash in the form of $20 bills. In instances when exact change is needed, the ATM is not very useful. However, banks are recognizing customers want more flexibility when it comes to their cash withdrawals.

Cardless ATM access: Like our wallets and personal identification, our smartphones are always by our side. More and more mobile phone manufacturers are building smartphones with near field communication (NFC) technology, which lets your mobile phone communicate with certain devices within close proximity.

Make credit card or loan payments: We can pay your credit card bill or mortgage through the mail, online banking or a bank teller, never been able to perform this task through the ATM. It would certainly be another level of convenience that would be much appreciated by many bank customers.

ATMs may have many services/facilities such as:
- Account information,
- Cash deposit,
- Regular bills payment,
- Purchase of re-load vouchers for mobiles,
- Mini/short statement,
- Loan account enquiry, etc,

ADVANTAGES OF ATM:
Quick Cash Withdrawal: As the name suggests and is well known to all, just insert your ATM Debit Card into the Automated Teller Machine, punch the code and the amount you want to withdraw and you get the cash in your hands.

Anyone Can Have Bank Card: All you need is a Bank Account to get a debit card cum ATM card issued. This is much easier than applying for a credit card as a debit card is simply linked to your bank account.

Account balance inquiry: We can check your account balance at the ATM. Also there is a facility to get mini statement of your bank account.

Details of recent transactions: Through the ATM card you can quickly get the mini statement giving the details of recent transactions carried out in your bank account. The information would be in brief and limited to the last 8 or 10 transactions only.

Deposit cash / cheques: There is no need to go the branch to deposit cash or cheques. Just go to the nearest ATM and do the needful. The ATM clearing times are displayed at the ATM.

Request for new cheque book: As in any case can also make a request for a new cheque book through the ATM 24 x 7, instead of driving down to the branch and filling in the requisition slip.

Transfer funds between accounts within the same Bank: If you are holding the ATM card then most of the banks allow you to transfer the funds from one account to another account on a real time basis. Some banks also let you transfer funds from your accounts to any third party provided the account is with the same bank.

BENEFITS OF ATM:
The benefits of using Bank ATM cards are more than evident.

Save time: This is perhaps the single most benefit. Save time in driving down to the branch and you do not have to waste time waiting in the queue to perform your transactions. The ATM Card facilities provide you with the option of banking instantly for various transactions.

Convenient 24×7 Banking: At the ATM, now you are not bound to do your transactions within banking hours. There no need to worry about bank holidays or public holidays. It is 24 x 7, 365 days a year banking facility.

Withdraw Cash when overseas: Depending on the type of facility provided by your bank, if you are travelling overseas, then the card can be used to draw currency of the country you are travelling to, from the ATM.

Universally Accepted: It is normally accepted everywhere. However you must check with the restaurant or the hotel if they have a system of accepting the credit and debit cards. It can almost be sure if there is mastercard logo on your debit card. Also you should make double sure by telling your bank that you’re leaving your station and there should be any interruption in the service.

Security features: The use of ATM is restricted only to the person who knows the PIN. If you keep the PIN confidential then no one but you can use the ATM to do the banking transactions.

Save your account from being dormant: One or the other account goes dormant if you have not done any transaction for 6 months or so. To make it operational again is a hassle. The reason for this is that most of us are hard pressed for time. Now you can do one small transaction at regular intervals to keep it active.
Helpful Budgeting Tool: With an ATM Debit card you can never go overboard with your money spending. The debit card ensures that you get to spend only that much money that you have in your bank account. This means you cannot go into a situation like “credit card debt”. This helps you to strictly stay within the budget limits, unlike with credit cards.

DISADVANTAGES OF ATM:

Fraud: Criminals can fit skimming devices and small cameras to ATMs. These machines record account details and personal identification numbers, which the crook uses to withdraw money from those accounts. ATM skimming costs the U.S. banking system around $1 billion each year, or $350,000 a day, according to the Secret Service.

Fees: Banks and machine owners draw a huge source of revenue from ATM fees. Cardholders can usually withdraw cash for free from ATMs owned by their bank, but typically have to pay to use machines owned by other companies.

Theft Risk: If you go to a bank, you're likely walking into a secured area watched by multiple cameras or a life guard. Those elements encourage crooks to keep their distance from the bank. You'll find no such security blankets with an ATM. It also takes a little time to take a card out, insert it in the machine, access your account and get your cash. That can be enough time for a crook to attack, which is why some people won't use an ATM after dark or in secluded locations.

Card Retention: ATMs give, but they can also take. They can malfunction and simply not be available when you need them. Some will also retain damaged cards, or any card if its owner fails to enter a correct PIN after three attempts. A cardholder can usually reclaim her card if it's been retained by a machine owned by her bank. However, if the card is kept by another bank’s ATM, there's no guarantee she'll ever see it again.

CUSTOMER IDENTITY INTEGRITY:

There have also been a number of incidents of fraud by Man-in-the-middle attacks, where criminals have attached fake keypads or card readers to existing machines. These have then been used to record customers' PINs and bank card information in order to gain unauthorised access to their accounts. Various ATM manufacturers have put in place countermeasures to protect the equipment they manufacture from these threats. Alternative methods to verify cardholder identities have been tested and deployed in some countries, such as finger and palm vein patterns, iris, and facial recognition technologies. Cheaper mass-produced equipment has been developed and is being installed in machines globally that detect the presence of foreign objects on the front of ATMs. Current tests have shown 99% detection success for all types of skimming devices.

TRANSACTIONAL SECRECY AND INTEGRITY:

The security of ATM transactions relies mostly on the integrity of the secure crypto processor; the ATM often uses general commodity components that sometimes are not considered to be “trusted systems”. Encryption of personal information, required by law in many jurisdictions, is used to prevent fraud. Sensitive data in ATM transactions are usually encrypted with DES, but transaction processors now usually require the use of Triple DES. Remote Key Loading techniques may be used to ensure the secrecy of the initialisation of the encryption keys in the ATM. Message Authentication Code (MAC) or Partial MAC may also be used to ensure messages have not been tampered with while in transit between the ATM and the financial network.

FINANCIAL NETWORK:

Most ATMs are connected to interbank networks, enabling people to withdraw and deposit money from machines not belonging to the bank where they have their accounts or in the countries where their accounts are held (enabling cash withdrawals in local currency). Some examples of interbank networks include NYCE, PULSE, PLUS, Cirrus, AFFN, Intercar, Interswitch, STAR, LINK, MegaLink and BancNet. ATMs rely on authorization of a financial transaction by the card issuer or other authorizing institution on a communications network. This is often performed through an ISO 8583 messaging system.

Many banks charge ATM usage fees. In some cases, these fees are charged solely to users who are not customers of the bank where the ATM is installed; in other cases, they apply to all users. In order to allow a more diverse range of devices to attach to their networks, some interbank networks have passed rules expanding the definition of an ATM to be a terminal that either has the vault within its footprint or utilises the vault or cash drawer within the merchant establishment, which allows for the use of a scrip cash dispenser.

ATMs typically connect directly to their host or ATM Controller on either ADSL or dial-up modem or a telephone line or directly on a leased line. Leased lines are preferable to plain-old telephone service (POTS) lines because they require less time to establish a connection. Less-trafficked machines will usually rely on a dial-up modem on a POTS line rather than using a leased line, since a leased line may be comparatively more expensive to operate compared to a POTS line. That may be solved as high-speed Internet VPN connections become more.

Common lower-level layer communication protocols used by ATMs to communicate back to the bank include SNA, and so on...
over SDLC, TC500 over Async, X.25, and TCP/IP over Ethernet. In addition to methods employed for transaction security and secrecy, all communications traffic between the ATM and the Transaction Processor may also be encrypted using methods such as SSL.

SECURITY:
Security as it relates to ATMs, has several dimensions. ATMs also provide a practical demonstration of a number of security systems and concepts operating together and various security concerns are addressed.

CONCLUSION:
ATM is very useful for us. It takes large part of our world. All of the people use ATMs. It is mainly used purchase and sales of company or the business firm, or else. It is mainly depend on the banking system.
Green Banking: An Innovative Initiative for Indian Commercial Banks.

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Abstract: Banks and financial institutions can play a major and decisive role in these global efforts to make our planet a better place to live in. As providers of finance, banks can ensure that businesses adopt ecofriendly activities. Incentives by way of offering cheaper funds for adopting green technologies will have a long term beneficial impact on the environment. As major implementers of technology, banks themselves can adopt green practices and thereby lead the way in this global initiative. Also, product and service innovations and leveraging on the use of technology enable banks and their customers today to reduce the usage of resources such as paper, thereby aiding in environmental protection. It is the term used by banks to make them much more responsible to the environment. The term green banking means developing inclusive banking strategies which will ensure sustainable economic development. In this study, we have tried to explore the green banking activities of Indian commercial banks and to find out the adopting green banking initiatives.

Keywords: Environment Friendly, Green Banking, Green Initiatives, sustainable development.

INTRODUCTION

Green Banking is comparatively a new development in the financial world. It is a form of banking taking into account the social and environmental impacts and its main motive is to protect and preserve environment. Green Banking is an umbrella term referring to practices and guidelines that make banks sustainable in economic, environment, and social dimensions. It aims to make banking processes and the use of IT and physical infrastructure as efficient and effective as possible, with zero or minimal impact on the environment. Considering the nature of banking processes and infrastructures, functioning of greening banking in two levels. Making day-to-day business operations, banking products and services greener by following simple practices and making them environmentally friendly.

Banking customers have plenty of choices for selecting their financial institutions. They look for more modernized banking procedures and also the use of technology in banking. Since there is high demand for innovative development in the banking industry from the customers. Banks are forced to adopt modern technology which will contribute to green banking. Green is becoming a symbol of Eco-consciousness in the world. According to RBI (IDRBT, 2013) green banking is to make internal bank processes, physical infrastructure and information technology effective towards environment by reducing its negative impact on the environment to the minimum level. In India, green banking is in its initial phase, Adoption of green banking practices will benefit the environment in many ways. Banks can do much more help to the environment by just promoting green banking. Use of green banking practices will result savings of energy, fuel, paper as well as water.

Green Banking Initiatives in the Public Sector Banks

Green Banking Initiatives taken by State Bank of India (SBI)

- Our over 48,000 ATMs ensure reduced consumption of paper at Branches.
- The Bank’s operations generate very minimal emissions / waste and hence, the quantity of emissions / wastes generated by the Bank in the FY 2013-14 was far below the permissible limits given by the Pollution Control Board of India.
- The Bank has launched the Green Channel Counter (GCC) facility in all retail branches (14,981 branches) to enhance convenience to the customers and save on cost and time per transaction. GCC is banking transactions through debit cards without usage of papers.
- The Bank has 1,352 Self Service Kiosks (SSKs) as on 31st March, 2014 enabling more than 55,000 transactions daily. SSK is again a way of doing paperless banking. The Bank introduced Green Remit Card (GRC), a remittance card, on 2nd January, 2012 for facilitating large number of cash deposit transactions at our branches. A cardholder can swipe the card at GCC or at Cash Deposit Machines (CDM) and remit money to the beneficiary whose account number is mapped to the card.
- Green Power represents an innovative scheme to improve loan recovery culture among farmers by rewarding the villages with solar street lights under corporate social responsibility.
● The Bank was awarded Asia Green Future Leadership Award 2013 for ‘Best Green Service Innovation’.

Green banking initiatives taken by Indian Banks (IB)
● Realizing its duty towards the Society for providing a clean and pure environment, Bank as a green initiative measured planted 1,20,273 saplings across the country.
● As an energy conservation measure, roof top Solar system and LED fixtures were installed at Corporate Office and other Offices, resulting in saving of around 4 -5% in energy consumption at Corporate Office alone.
● Passbook Kiosks at 216 locations resulted in migration of 24% of branch transactions and enhanced customer convenience relating to printing of passbook.
● Mobile Application “IndPay” attracted 4.88 lakh registrations since launch with monthly financial / non-financial transactions crossing 30 lakh numbers. QR based ‘Scan and Pay’ feature being the latest addition in this application.
● IndMobiEasy, an USSD based Mobile App.
● E-Lounges at 102 locations ensuring availability of basic banking services to customers on 24X7 bases, with facility to deposit/withdraw cash.
● 440 new ATMs/BNAs installed resulting in migration of 59% of branch transactions, facilitating convenience of banking.
● Internet banking platform catering to the banking requirements of 11.2 lakh customers as on 31.03.2016 registered a growth of 25% in terms of transactions.

Green banking initiatives taken by Punjab National bank (PNB)
● ATM Assist: Unique App enabling the customer not only to locate PNB’s ATM but also to lodge complaints related to ATMs.
● Mobil Ease: Mobile app to provide single touch banking.
● Sleep Easy: To disable and re-enable Internet banking and Mobile banking password.
● Green PIN: To enable customers obtain duplicate PIN for debit card instantly through SMS request.
● Online PPF and RD account opening facility.
● Online booking of locker facility anywhere in India through the corporate website.
● The Bank has also introduced the facility to register for Mobile Banking through vast network of over 9000 ATMs.

Green banking initiatives taken by Bank of Baroda (BOB)
● Internet banking, mobile banking was added as alternate delivery channel to reduce the use of paper in banking procedure.
● As a part of green banking initiatives various changes were made such as backup Consolidation, server and desktop virtualization.
● While financing the commercial projects the banks give a due weight age to green projects such as windmills and solar power projects which helps in earning the carbon credit.
● The bank insisted to implement water treatment plant and obtain NOC from central/ state government pollution control board while lending the loan to manufacturing units which emit toxic polluting substance.
● Promotion of measure of pollution control and efforts for environmental protection & conservation and cleaning of environment.

Green Initiatives taken by Canara Bank
● As a part of green banking initiative, the bank had adopted environmental friendly measures such as mobile banking, internet banking, tele-banking, solar powered bio-metric operations etc.
● Canara bank had set up e-lounges for high-tech banking facilities like internet banking, passbook printing kiosk, ATM, online trading, tele-banking and cash/cheque acceptor.
● The bank had implemented e-governance for HRM function and several other administration areas to reduce the paperwork.
● In terms of Lending policy, they are giving due preference and weightage to projects which can earn carbon credits like solar energy projects, windmills, etc.

Green Banking Initiatives in the Private Sector

Green Initiatives taken by ICICI Bank
● Providing green banking facilities such as mobile banking, net banking which reduces the use of paper as well as save the consumer time helping the bank in earning its carbon footprint.
● The bank is working with Green Business Centre in collaboration with other business organization having focus on promoting green building, energy efficiency, recycling etc.
● Providing 50% relinquishment on the processing fee of selective car models that uses alternate mode of energy like LPG (Liquefied petroleum Gas) & CNG (Compressed Natural Gas).
Recently the bank has given the loan fund of Rs. One billion to the companies venturing into energy economical and environment friendly process. Alongside that bank has additionally served and promoting the use of unpolluted technology in STBSS.

Green Initiatives taken by HDFC Bank

- Reduction in paper usage by issuing e-transaction advices to corporate customers & encouraging e-statements among retail customers.
- Energy conservation by conventional light options by CFLs, and establishing green data centers.
- Tying up with vendors for paper and plastic recycling & IT policy is strictly followed for disposing the IT assets due for retirement.
- For exploring the renewable energy 20 solar ATMs have been set up in the Bihar as the pilot test and furthermore will be set up after it.
- Focusing on green procurement by purchasing energy star rated electronic products & purchasing diesel generator set and air conditioner that are compliant with the norms of central pollution control Board (PCCB).

Green Initiatives taken by Axis Bank

- Recycling initiative under the Green Banking banner that helped the bank productively use around 21572 kilometers of dry waste during the year.
- The Axis Bank’s corporate office in Mumbai is designed and constructed as a Platinum LEED Certified Green Building.
- The bank uses renewable energy to power emergency lights, generated through a solar power plant. It has also installed motion sensors for reducing energy usage, rainwater harvesting system and a sewage treatment plant for maintaining a green environment.
- Launched a plant-a-sapling initiative, in which the bank planted over 1 lakh saplings on August 1 and 2 at over a thousand locations across the country.
- Facility of e-statement and for each e-statement registration by a customer, Axisbank has decided to donate a note book to the needy and poor. Axis Bank encourages its customers to subscribe for e-statements and other electronic formats of Communication, thus significantly reducing paper consumption.

Green Initiatives taken by Kotak Mahindra Bank

- The Bank’s ‘Think-Green’ initiative encourages customers to sign-up for e-statements and discontinues paper statements, thereby saving the environment. At Kotak Securities, e-contracts have been introduced to save paper; the number of pages in the Account Opening Forms has been reduced by 20 sheets and multiple client updating forms.
- Further, in-line with the Government of India - Ministry of Corporate Affairs’ (MCA) green initiative, bank is encouraging customers opt for e-copies (electronic form) of the annual report instead of physical copies.
- Facilities such as net banking, SMS based transaction detail for customers are provided by the bank that help in paperless banking and reduce the carbon footprint. An agreement of US$5 million has been signed between IBM and Kotak Mahindra Bank Limited that will help the bank to build and maintain energy-efficient & highly reliable green data center and it will help Kotak to save over US$1.2 million in operational efficiency and will also reduce energy costs for the upcoming five years.

CONCLUSION

Indian banks need to be made fully aware of the environmental and social guidelines to which banks worldwide are agreeing to. As far as green banking is concerned, Indian banks are far behind their counterparts from developed countries. If Indian banks desire to enter global markets, it is important that they recognize their environmental and social responsibilities. Thus, the banks should play a pro-active role to take environmental and ecological aspects as part of their lending principle which would force industries to go for mandated investment for environmental management, use of appropriate technologies and management systems. For Indian banks from funding sustainable projects to offering innovative products and services in the areas of green banking. The survival of the banking industry is inversely proportional to the level of global warming. Therefore, for sustainable banking, Indian banks should adopt green banking as a business model without any further delay.

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Internet Banking

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Abstract: This purpose is to know that how the banking system in our economy changes in the present and forthcoming years. Internet banking plays an important role in the life of the individuals and the economy. Most of the banks are providing the facilities for net transactions and for paying the money through the net. They create software for their bank and they allow their customers to use the software for banking. Now a day the internet banking is done in smart phones and other applications. With the help of internet banking the customers are convenient to send and receive the money at any time they are in need. Internet banking is used in various sectors and institution to transact the cash from one account to another. This type of banking saves the time of the customers who are not able to come over to bank to depositing and transacting the money when they are in need. Internet banking supports the needs of the people and they help to do their work from one place to another. Buy the introduction of internet banking the work of the bank officers are less so they can concentrate on the interior work of the bank like the closing work and the major transaction in the bank. By the use of internet banking we can know the financial position of our bank account and the other details of our bank account. Internet banking has a major role in the economy. So the internet banking can be a boon to the society.

Key Words: Internet banking, software, time consumption, transaction of money, reduction of work.

INTRODUCTION:

Internet banking refers to the system that enables bank customers to access accounts and general information on bank products and services through a personal computer or other intelligent devices. The internet banking allows the user to now the detail of the accounts they have in the bank. Most banks provide net banking to the customers for the personal reference about the account details in the device. They create their own app for their bank and allow the customer to access the app and can know the details of the saving account. Internet banking allows the public to refer the bank balance, loan, transaction, etc. This reduces the work of the employee in the bank. Internet banking is a wide network that can be accessed from any place in the world. It is like a mini passbook which we can carry within our self. It shows all the details about the bank account that we hold in a particular bank. The bank updates the information about the customer’s bank account each and every second. More than 90% of the account holders are using the internet banking facilities. They use them in their mobile, personal computers and in many devices. Internet banking has become a source for the customers to know about their bank details in a fraction of seconds from where they are it plays a vital role in the digital world.

MEANING:

Internet banking is a service provided by bank so that the customers can find out the information about their bank account, pay bills, can send money and receive money in a safer way. Internet banking is the process which is done through the online we can access the corresponding bank app to know the details of the bank account. Today many banks ar4e internet only instituted, these virtual banks have lower overhead costs than their brick and mortar counterparts. With the advent of the internet, everything has transformed into its electronic version. Banking is not far behind. Now when people have access to all kind of gadgets like laptop, phones, tablets banking is just one click away from making financial transaction.

BENEFITS OF INTERNET BANKING:

The biggest benefits of internet banking are the convenience. It is much better than physically going to the bank in many ways.

1. You can make a transaction from anywhere – you need not actually go to a bank counter – you have access from home, work or even when you are on a holiday.
2. You can make a transaction at any time – you need not abide by the working hours of the bank. You
need not even worry about Sundays or other holidays your account is accessible 24x7.
3. You can use any device with internet access for your bank activities – phones, laptops, desktops, and tablets—anything.
4. Banks offer a wide range of services—payment of bills, transfer of money, checking account transaction via the internet. All the transactions are automatically updated immediately; therefore you always have access to your information without submitting any slips or documents. Thus your account is always up to date without any discrepancies since the process is completely automated.

The best part about internet banking is that you can keep track of all your different accounts simultaneously. In case you have multiple accounts you need not go to different branches of your bank. This saves a lot of time for the customers. They can do the transaction from one place itself and have a clear detail about their bank account.

THE OBJECTIVE OF STUDY:
- To study the role of internet banking.
- To analyze awareness among customers using internet banking.
- To identify the level of security among customers in using the services.

FUNCTIONS OF INTERNET BANKING:
The following are the main functions of internet banking in India.
- Issue Demand Draft online.
- Transfer funds to own and third party accounts.
- Credit beneficiary accounts using the VISA Money transfer, RTGS/NEFT features.
- Generate account statements.
- Setup standing instructions.
- Configure profile settings.
- Use Tax for online tax payment.
- Use e-pay for automatic bill payment.
- Interface with merchants for railway and airline reservation.
- Avail DEMAT and IPO services.

INTERNET BANKING IN INDIA:
The Reserve Bank of India constituted a working group on internet banking. The group divided the internet banking product in India into 3 types based on the levels.

INFORMATION ONLY SYSTEM: General purpose information like interest rates, branch location, bank products and their features, loan and deposit calculation are provided in the bank website. There exist facilities for downloading various types of application forms. The communication is normally done through e-mail. There is no interaction between the customer and banks application system. No identification of the customer is done. In this system, there is no possibility of any unauthorized persons getting into production system of the bank through internet.

ELECTRONIC INFORMATION TRANSFER SYSTEM: The system provides customer—specific information on the form of account balance, transaction details, and statement of accounts. The information is still largely of the ‘read only’ format. Identification and authentication of the customer is through password. The information is fetched from the banks application system either in batch mode or offline. The application system cannot directly access through the internet.

FULLY ELECTRONIC TRANSACTIONAL SYSTEM: This system allows bi-directional capabilities. Transactions can be submitted by the customers for online updates. This system requires high degree of security and control. In this environment, web server and application system are linked over secure infrastructure. It comprises technology covering computerization, networking and security, inter—bank payment gateway and legal infrastructure.

THE ROLE OF INTERNET BANKING IN THE SOCIETY:
Internet banking is considered to be an important sector in finance industry. It provides a platform for the society, as they can check their account details, make payment and transfer money between accounts within short span of time.

In this busy world we are not able to go to bank for our bank transaction. We mostly won’t get any time for standing in queues for the transaction in banks. So the internet banking plays an important role in the society. It helps the customer to do transaction from one place to another place. We can know the details of our bank accounts from the place we are. The internet banking acts as the mini passbook for the busy society. They help the society to be free from the burden to stand in queues for the transaction.

ADVANTAGES OF INTERNET BANKING:
Internet Banking has several advantages over traditional one which makes operating an account simple and convenient. It allows you to conduct various transactions using the bank’s website and offers several advantages.
Some of the advantages of internet banking are:

- Online account is simple to open and easy to operate.
- It is quite convenient as you can easily pay your bills, can transfer funds between accounts, etc. Now you do not have to stand in a queue to pay off your bills; also you do not have to keep receipts of all the bills as you can now easily view your transactions.
- It is available all the time, i.e. 24x7. You can perform your tasks from anywhere and at any time; even in night when the bank is closed or on holidays. The only thing you need to have is an active internet connection.
- It is fast and efficient. Funds get transferred from one account to the other very fast. You can also manage several accounts easily through internet banking.
- Through Internet banking, you can keep an eye on your transactions and account balance all the time. This facility also keeps your account safe. This means that by the ease of monitoring your account at anytime, you can get to know about any fraudulent activity or threat to your account before it can pose your account to severe damage.

DISADVANTAGES OF INTERNET BANKING:

- Understanding the usage of internet banking might be difficult for a beginner at the first go. Though there are some sites which offer a demo on how to access online accounts, but not all banks offer this facility. So, a person who is new, might face some difficulty.
- You cannot have access to online banking if you don’t have an internet connection; thus without the availability of internet access, it may not be useful. Security of transactions is a big issue. Your account information might get hacked by unauthorized people over the internet.
- Password security is a must. After receiving your password, do change it and memorize it otherwise your account may be misused by someone who gets to know your password in advertently. You cannot use it, in case, the bank’s server is down. Another issue is that sometimes it becomes difficult to note whether your transaction was successful or not.
- It may be due to the loss of net connectivity in between, or due to a slow connection, or the bank’s server is down. Internet Banking has definitely made the life easy for users by providing online access to various banking services.

CONCLUSION:

Thus the internet banking plays an important role in the life of each individual. The internet banking is used by various bank customers for the transaction and for many purposes. Now a day’s each individual does the bank transaction and they can check the bank details with in a fraction of seconds and can have a clear view of the saving accounts of the customers. So internet banking have a major role in the society they help the bank customers to know the details of the account with in a fraction of minutes. As like all the sectors they have a drawback, but it are useful for the society and the workers who are not able to get time for the fund transfer for their need. So internet banking is boon to the society. They have a high level of position in the hearts of the individuals and the society.

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New Payment Technologies

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Bank
A bank is a financial institution that accepts deposits from the public and creates credit. Lending activities can be performed either directly or indirectly through capital markets. Due to their importance in the financial stability of a country, banks are highly regulated in most countries. Most nations have institutionalized a system known as fractional reserve banking under which banks hold liquid assets equal to only a portion of their current liabilities. In addition to other regulations intended to ensure liquidity, banks are generally subject to minimum capital requirements based on an international set of capital standards, known as the Basel Accords.

Banking in its modern sense evolved in the 14th century in the prosperous cities of Renaissance Italy but in many ways was a continuation of ideas and concepts of credit and lending that had their roots in the ancient world. In the history of banking, a number of banking dynasties – notably, the Medicis, the Fuggers, the Welsers, the Berenbergs and the Rothschilds – have played a central role over many centuries. The oldest existing retail bank is Banca Monte dei Paschi di Siena, while the oldest existing merchant bank is Berenberg.

COMMENTARY
Changes in consumer behavior continue to be rapid, disruptive, and largely driven by technology influences, such as mobile devices, big data, the cloud, IoT and machine learning. Simultaneously, security breaches are growing and continue to place both consumers and businesses at risk.

While cash and credit cards may never disappear entirely, this convergence of forces is driving one of the most profound shifts to how we pay for goods and services, challenging both financial institutions and retail providers to adjust their strategy for the future of payments. Here are the three leading technologies paving the way.

Contactless payments
Debit and credit cards may never go away, but swiping them just might. Contactless payments rose 164 percent in the U.K. last year; they doubled in Canada in 2015; and 53 percent of Australians have made a contactless payment. We expect the U.S. to follow suit as more merchants upgrade their point-of-service terminals to accept chip cards, and along with them, contactless payments.

Put a finger on authentication
Rather than forcing customers to tap in their usernames and passwords every time they want to make an online transaction, NCR’s Digital Insight developed TouchID, which allows customers of financial institutions to log in to their bank accounts with nothing more than their fingerprints. In addition to being a uniquely accurate identifier, fingerprints are infinitely more difficult to lose than a password—and much harder to hack, too.

Voice-activated transactions
Capital One customers who use Amazon gadgets can simply ask the virtual assistant Alexa to take care of financial transactions for them. As with fingerprint technology, this innovation saves consumers the hassle of remembering yet another password and going through a tedious login procedure every time they want to make or receive a payment. In the future, especially as voice recognition technology improves, we expect this method of sending and receiving money to gain more traction.

Far from being mutually exclusive goals, efficiency and security are tied tightly together in the world of payments. As we develop the technology to move away from passwords that can be guessed or stolen to more unique identifiers such as voices, fingerprints, and sensors that eliminate point-of-service terminals, we also move toward a more secure future. The very things that will make consumers’ lives easier will also protect them—a win-win if ever there was one.

New payment technology powers India’s impressive E Commerce growth
India’s burgeoning E Commerce market is set to double over the next five years, driven by advances in alternative

Disruptions in Banking Sector in the Current Scenario
payments technologies such as E Wallets, mobile bank transfers and credit cards. According to new data from leading payments company Worldpay, India is on track to be worth US$104bn by 2021, which will make it the seventh biggest E Commerce market in the world.

M Commerce is the fastest growing sector, projected to quadruple over the next four years, making up 45% of all online sales. Indian consumers’ enthusiasm for mobile shopping is supported by the popularity of new payment methods such as E Wallets, which account for an ever-increasing share of the market. In 2017 E Wallets represented 26% of all online payments, but this is set to grow to 37% by 2021.

Bank transfers are the second most popular payment method with 27% of the market today; this is set to increase to 34% by 2021 thanks to the advance of new payment technologies.

Worldpay’s report predicts a big drop in the popularity of cash on delivery, falling from 13.5% of the market today to just 3% in five years. The decline in cash and the rise of alternative payments are fuelled by India’s recent “cash crisis”, which followed the recent withdrawal of 500 and 1,000 rupee notes from circulation in an effort to reduce corruption.

The findings are published in Worldpay’s annual Global Payments Report, which analysed eCommerce spending patterns across 36 different markets on five continents. The report forecasts that the Asia-Pacific eCommerce market will grow by an average of 12% annually, and is set to be worth US$2,100bn by 2021. India is one of the fastest growing markets in the regions, set to double over the next five years.

The country’s demonetisation drive, coupled with a new generation of digital payment services is opening up new opportunities for a relatively high proportion of “unbanked” to make purchases online, where this was previously not possible.

Commenting on the research, Phil Pomford, General Manager Asia-Pacific at Worldpay said: “India is one of the fastest-growing eCommerce markets in the world, and demonetisation is proving to be a strong force pushing the use of digital payments. India’s cash economy has struggled in 2017, but this has been offset by significant growth in alternative payment methods and credit cards, and their share of the market will only grow as more Indian consumers gain access to the Internet via mobile and desktop devices.

“The growth of eCommerce in India, coupled with the country’s enormous potential, provides lucrative opportunities for retailers and merchants who can support India’s preferred payment methods,” concluded Pomford. Worldpay has compiled the following recommendations for merchants looking to cash in on the continued strong growth of M Commerce and E Commerce in India and the wider Asia-Pacific region:

One-click ordering: Consumers are more likely to shop more often with companies that save their payment details for one-click ordering. Merchants should provide one-click ordering to make online checkout as seamless as possible – especially via mobile apps.

Offer choice: The decline in credit and debit cards means it will be more important than ever to provide popular alternative methods including e-Wallets like PayPal and Visa Checkout.

Cross-border trade: Merchants should ensure that they have local acquiring capabilities wherever they have a legal entity; offer a wide range of currencies at checkout; and consider local language customer support in their customers’ time zone to deliver a great customer experience.

Next-Gen Payment Processing Technologies: Thanks to advances in technology, we no longer have to bring that much cash around on hand with us to buy the things we need and want. The most we need to make room in our wallets and purses for are some plastic cards, or better yet, none at all, if we already have our smartphones with us. And with it just a few more months until the holiday season—where there will obviously be a lot of money changing hands—we’re running a series of articles that tackle each modern payment system currently in use right now. What they are, how they work, and what their pros and cons are.

But before we can get to those newer payment systems, let’s look at one of the oldest electronic payment systems—traditional credit cards. This’ll not only help us understand more of the processes involved in such a system, but also the advantages and the disadvantages that come with them.

The Credit Card Payment System
First issued in 1966 by Mastercard in the US, the common credit card payment system is a type of electronic payment system that involves the use of a plastic card with a magnetic stripe (or more recently, a chip) that retains information of the cardholder’s credit account made with a bank or other financial institution. The cardholder uses the card to pay for products and services in lieu of cash, and the transactions are logged by the bank as debt to be paid off at a predetermined time.

Who is involved in the credit card payment system?
To fully explain how credit card systems work, we need
to explain the relationships between the parties involved in this payment system:

**Consumer:** The cardholder who purchases goods and services using the credit card.

**Merchant:** Goods and services provider who accepts credit card payments.

**Issuer:** Bank or financial institution that issues credit card to consumers.

**Acquirer:** Bank that processes and settles merchant’s credit card transactions with an issuer.

**Card brand:** Visa, Mastercard, American Express (AMEX). These are brands whose networks are used to facilitate interactions between acquirers and issuers when authorizing and settling transactions.

**Payment Service Provider (PSP):** A third party service provider who handles payment transactions between merchants and multiple acquirers.

**Payment Switch:** In-house or third party service providers who provide routing services between merchants and multiple PSPs.

Here's the typical process that takes place after a credit card is swiped:

1. The consumer swipes their credit card on the merchant’s Point-of-Sale (PoS) terminal to purchase goods and services.
2. The PoS terminal reads the magnetic stripe on the card, and then sends the credit card information to the merchant’s PoS system.
3. The PoS system then contacts the PSP, who, depending on the card brand used will contact a designated acquirer for transaction authorization.
4. The acquirer uses the card brand’s network to contact the issuer of the credit card.
5. The issuer returns an authorization status to the acquirer using the card brand’s network.
6. Finally, the acquirer passes the authorization to the PSP who forwards it to the PoS system, which then completes the transaction.
7. All of this happens in a matter of seconds, and thanks to breakthroughs in online technology it is a very reliable payment process that is easily available nearly everywhere in the world.

**Advantages:**
One of the key advantages of using a credit card is that consumers can defer paying for their purchases at a later time. This is especially convenient when a consumer finds themselves without cash at the moment of purchasing. There’s also the fact that many banks allow cardholders to pay their incurred credit card debt in installments or increments.

It's also widely accepted globally, so a consumer isn’t completely out of luck if for some reason they are left with only their credit card in a foreign country, provided they do accept their brand of card.

**Disadvantages:**
Since the boom of e-commerce, credit cards have been the target of many cybercriminals who have designed many malware and phishing schemes to steal banking credentials. But credit cards also has its share of offline threats with the proliferation of card cloners—retail PoS devices that have been tampered or altered to retain the information of cards that have been used on them. The simplicity of the traditional magnetic stripe card has made it easy for criminals to use these methods and devices to collect that information for their own gain—such as the use of the stolen credit card information to pay for their own purchases, i.e. credit card fraud.

PoS RAM scrapers are malware designed to do the same exact thing as card cloners, but without the need for a device or physical access to the machine. The malware infects retail PoS devices and sends the information remotely to cybercriminals.
Finally, a cardholder’s credit card being stolen or lost can also lead to unauthorized charges, but thankfully credit card companies have developed policies to protect their customers from such unfortunate incidents. At worst, a consumer will only need to fill out forms to declare that their cards have been used without their permission.

Next-Gen Payment Processing Technologies
The numerous threats that have preyed on the traditional credit card payment system, coupled with new technology, has led to the development of different payment processing technologies that not only allow for more convenient transactions, but also ones that are more secured.

EMV Credit Cards – Also called Chip-and-PIN cards, these cards feature a chip that stores a cryptogram that detects modified transactions. It also requires a PIN for extra authentication.

Contactless RFID Credit Cards – This payment technology uses passive Radio Frequency Identification that allows cardholders to wave the cards in front of RF terminals to complete transactions.

Mobile Wallets – First launched in Japan in 2004, this technology works on NFC enabled smart phones, and has since been implemented by Google and Apple through their mobile platforms.

- Apple Pay
- Android Pay

New Payment Processing Architectures - three next-gen architectures designed to improve secure mobile payments.

- Encryption and tokenization
- Cloud-based PoS systems
- Secure Element systems.

Modern Payment Technology: Smart Cards and Mobile Wallets Move
For decades, when people mentioned credit cards, they meant one thing: a plastic card with raised numbers on the front and a black magnetic strip on the back. But with increasing fraud concerns and exploding technological capabilities, a host of new payment cards are now filling wallets around the globe. Here is a quick rundown of the dominant card technology available today.

Magnetic Strip
The trusty old magnetic strip, or “mag stripe,” cards have been in use as a payment method for more than three decades. Within just a few years of their introduction, they became nearly ubiquitous. With these traditional cards, a magnetized metallic strip carries the information needed for a payment transaction encoded on three “tracks” embedded in the strip.

When a customer swipes the card to make a payment, the card reader extracts the account number, the expiration date and other information needed to communicate with the account holder’s bank and speeds it onto a high-speed payment network.

The growth of magnetic strip cards was powered in large part by the low costs involved in the mass production and distribution of those cards, explained Jeffrey Green, Vice President of Digital Media at PYMNTS.com. “The primary benefit of magnetic strip cards is that nearly every merchant in the United States accepts them as payment,” said Green. “But their primary drawback is their vulnerability to fraud.”

That’s because scam artists have found ways to use devices called “skimmers” to intercept the information encoded on those magnetic strips and use them to make fraudulent purchases.

Chip Cards
Fear of fraud has driven most industrialized countries to shift their payment networks to so-called “smart card” networks. Smart cards have embedded microchips that carry the account and other identifying information. They also carry extra technology to keep scam artists from creating a fraudulent copy of the card.

“The chip in the card securely stores cardholder data and includes strong transaction security features and other application capabilities,” said Randy Vanderho of, executive director of the Smart Card Alliance and its EMV Migration Forum. “A mag stripe card, on the other hand, has minimal security because data is very easily read from and written to the card.”

Rather than swiping the card through a reader, consumers slide smart cards into terminals equipped to read the card’s encrypted data. Then, to verify that the card is theirs, consumers typically have to enter a PIN, which unlocks the chip and makes the data readable by the terminal.

Disruptions in Banking Sector in the Current Scenario
Contactless Cards
A much less common payment technology allows people to pay with their smart card simply by tapping the card on or waving the card over a reader at the cash register. This technology, known as “contactless,” relies on a tiny radio transmitter to exchange the payment information with the register – no swipe required.

“In the U.S., more than 17 million contactless payment cards have been issued to consumers. Contactless payments are a really convenient way for consumers to pay because they can simply tap their card to a reader to make a transaction,”

The current contactless technology in the United States includes small chips, known as radio frequency identification, as well as a more robust wireless protocol known as near-field communication.

The current incarnations of contactless cards haven’t moved much past the realm of novelty, but many analysts are hopeful that once contactless technology meets the EMV standard, a world of opportunity may open up.

“When the U.S. moving to EMV, it’s very possible that contactless payment technology will become more popular with consumers, issuers and merchants in the years to come,” Vanderhoof said.

The Future
Some analysts are even predicting that the future of electronic payments may ditch the cards entirely. These types of transactions might rely on mobile phones that use wireless transmitters for contactless transactions or even biometric sensors identifying customers by their fingerprint or retina scan.

The most advanced ideas of a mobile-based payment system are known as mobile wallets. With a mobile wallet, consumers can load multiple cards into one device and choose the preferred payment method for each transaction, all without carrying an actual wallet of cards.

Regardless of what the technological future holds, one thing is clear: electronic payments will continue to evolve, facilitating commerce in increasingly secure, cool and convenient ways for years to come.

New Payment Trends for 2018
With 2018 well underway, I have had time to reflect on what to expect in the ever-changing world of payments this year. My reflections are split into New Trends, Growing Trends and Ongoing Trends, with this blog focusing on the New Trends.

These are the trends that may be familiar to some, but are becoming established and are likely to become evident to many when we look back on 2018.

New Trends
- The consumer experience for payments becomes a battleground for banks, especially in Europe around authentication for PSD2 on third party applications
- Challenger bank (or neo bank) adoption is much higher than in the past due to their superior customer experience for payments
- Biometrics such as facial, voice and hand movement recognition, now robust enough for mass use (in part due to advances in machine learning), are adopted by banks and Fintechs as a weapon in the consumer experience battle, and also for securing cryptocurrency wallets
- Retailer wallets for both ecommerce and instore payments start appearing in sectors such as supermarkets, fuel and quick service restaurants, emulating the success of Starbucks and Walmart, and focused on a slick checkout process using biometrics
- Retailers start demanding new payment methods for recurring payments for subscription and credit-based services
- Fintechs and banks see the importance of linking credit and payments, self-evident for many years with credit cards, but expect to see this as an emerging theme in payments innovation (and very different to the dead-end trend of “innovating” credit cards)
Voice activated payments start appearing as digital assistants such as Google Home, Alexa, Cortana, Siri etc grow in popularity.

Central banks around the world warm to the idea of issuing their fiat currency on distributed ledger technology, with at least one making concrete plans to implement the technology (probably with a commercial bank or FinTech partner to bridge the gap with consumer propositions).

As banks adopt real time payments for the first time in economies such as Australia, Europe and the US, new products and services emerge to operate in real time, for example corporate cash management solutions for real time cross border payments, virtual accounts and fraud innovation.

The chief beneficiary of these trends is the consumer. Pro-active banks focused on true digital innovation have an opportunity to use these trends to provide new and very different consumer-friendly services and experiences. These banks can put clear-water between them and their less-enlightened competitors, taking market share from them; but fintechs and new entrants also have a unique opportunity to either compete with incumbent banks or supply technology and services to them.

**Mobile Payments**

Although the topic of “mobile payments” has been a buzzword in the payment landscape for several years, the figures on actual adoption have not quite met up to the hype. For example, in a recent US survey, only 29% of smartphone owners said they would use a mobile payment app. However, trends in other parts of the world show that this will probably change in 2018. One reason for this is the continual expansion of Asian mobile wallets into other parts of the world. Popular apps such as Alipay and WeChat have many loyal users throughout Asia and especially China, who use the apps extensively to pay for everyday products and make peer-to-peer payments. As Asian consumers become ever more mobile and travel to other parts of the world more often, the reach of these mobile payment platforms will also likely widen to provide greater convenience to Asian travellers. In fact, Chinese citizens are expected to make 225 million international trips by 2030, which adds up to a 7.3% CAGR for the period 2016 – 2030. Not only will Asian users demand that these apps are accepted by a growing number of countries and payment providers, consumers of other nationalities and cultures are also likely to come into greater contact with the capabilities of such apps, and will therefore adopt them or call for similar local alternatives.

Besides the anticipated rise in the use of mobile wallets, other aspects of mobile payments will also likely increase, such as payments via the Internet of Things (IoT), including wearables. By 2021, it is predicted that over 15 billion machine-to-machine (M2M) and consumer electronic devices will connect to the IoT. This provides vast opportunities for payments to be carried out on a contactless, instantaneous basis. Payments via wearables, such as smartwatches, are supposed to rise especially quickly. The heightened interest in wearable technology has come about, thanks to the popularity of fitness trackers, who are beginning to partner with payment methods such as Mastercard and Visa to offer their customers contactless payment possibilities. Partnerships such as these make wearables one of the most important trending contexts in payments, especially considering that 240 million units of wearables are expected to be shipped by 2021. Fitness trackers are expected to make up 30% of the wearable market by the same year.

**New Payment Systems in Retail**

As the payment landscape continues to expand and diversify, consumers also continue to demand more choice and flexibility in their payment methods and options. One such example of this change is the increase in retail companies offering “buy-now, pay-later” systems, also known as “split payments”, where customers can pay for their goods in instalments over time. Retailers in New Zealand and the UK have started offering this payment option, and even Amazon India offered a similar split payment option for a limited time to their customers. Some retailers have partnered with payment businesses that specialize in providing pay-later services. TopShop Australia has partnered with Australian FinTech start-up Afterpay since 2016 to offer its customers the option to pay for their products “while they’re wearing it”. As customers demand ever greater flexibility and payment options that are convenient for them, split payments will likely emerge as an important tool for retailers to keep customers happy.

**CONCLUSION:**

- More than 1/3 of consumers hesitate to shop online because of security concerns.
- The average business loses 5% of revenues to fraud every year.
- 50% of small businesses fall victim to fraud at some point in their business lifecycle.
- Resolving fraud costs an average of $114,000 each time.
New Payment Technologies in Banking Sector

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Abstract: The banking service sector encounters extraordinary changes by the introduction of disruptive technologies. This innovations are changing the sort of rivalry for the banking industry. Despite the fact that the electronic markets have overwhelmed the greater part of the play field, the client confronting forms are extend. The purpose of the study is to assess the progresses brought by the technologies in the financial market, regardless of whether they act as enabler or disruptor for the traditional banking models. This paper explains about the new payment technologies in the banking sector in current scenario.

INTRODUCTION

The banking industry is blended universally due to innovative technologies, from startups to digitization. Majority of the banks to a great extent have seized digitization and are aggressively adopting new technologies in order to innovate though they consider the disruptive technologies as a big threat. According to a research report, (innovation in retail banking), the proportion of banks with an innovation strategy has increased to 74 percent in 2016. Changing customer preferences, rapid evolution of technology and pressures from disruptive banking world are accelerating a major transformation of the banking industry [4]. The assembly of these forces is putting digitization at the focal point of technology renewal. According to the research findings and customer interactions, the following huge change in banking will be caused by the development of open API’s, AI and block chain. Disruptive technology is one that uproots a current innovation or upsets a customary business practice to make a new industry [7]. While numerous Indian banks have possessed the capacity to hold their clients through customary channels and digital service offerings, recent shifts in the industry are undermining this generally stable client base. Regardless of the way that individuals have been with their present bank for the past decade or more, client relationship at conventional banks is slanted to disruption [2]. This motivated us to analyze the effects of disruptive technologies on the Indian banking sector. Collective disruption, as new market contenders, is a developing element in the banking industry. However the study affirms that changes in consumer behavior is a main thrust. The established banks are attempting to grab significant opportunities, by developing a comprehension of these advancing customer inclinations. The customers opt for quick and active banks that can be a part of their daily lives. For convenience of consumers the banks are experiencing a shift, getting away from branch locations and proceeding towards digital products and services that fit with consumers’ smart mobile-empowered lives. An expanding opportunity exists for the newcomers to snip market share over time, due to the growing vulnerability of conventional banking practices. The banking industry is progressively focused with product improvement, conveyance and customer engagement being endeavored to linger on fingers’ tips. Therefore banking innovation needs to focus on creating a centralized customer business model and an infrastructure that appears to be uniform to the client.

Changes in the banking industry over time

We present statistics that illustrate some of the changes in technology, performance, and structure of the banking industry. Table 1 gives data on changes in the structure of the commercial banking industry annually over the period 1984-2001, which illustrate the consolidation of the industry. The total number of banking organizations (top-tier holding companies plus independent banks) and the number of banks substantially declined over the 17-year period at average annual rates of 3.3% and 3.4%, respectively, even while gross total assets (GTA) grew by 3.0% per year. The consolidation has primarily occurred through mergers and acquisitions (M&As) that combine institutions in different local markets – the average local market Herfindahl index has increased by only 1.1% annually. Table 1 also provides data on changes in the use of selected banking technologies, indicating significant growth in the use of new IT and financial technologies. The number of physical banking offices using human tellers has expanded at a 2.1% annual rate, whereas the number of IT-based ATMs has expanded at a 10.1% annual rate, so that ATMs now outnumber physical offices by more than four to one. The data
suggest that public financial markets have grown much faster than the 3.0% annual rate of bank GTA. Money market mutual funds, an alternative to bank deposits, grew at an average annual rate of 10.8% from 1984-2001. Corporate equity and corporate debt (bonds plus commercial paper), which are alternatives to bank loans, grew at annual rates of 10.0% and 11.3%, respectively, overtaking bank GTA by 2001. Finally, mortgage pools and other asset-backed securities – some of which are assets that were removed from bank balance sheets and some of which are alternatives to bank financing – grew at an annual rate of 13.7% over the interval. These data are consistent with the hypothesis that advances in IT and financial technologies have helped these financial markets to grow at faster rates than the banking industry. Money market mutual funds were helped by IT innovations that let them store, keep track of, and move large amounts of information on securities and customer accounts much more cheaply over time. Public equity and debt markets were similarly favored by IT innovations for handling data, and were also propelled by reductions in trading costs. Much of the trading is now done electronically and the costs per trade have fallen dramatically. Asset-backed securities markets were aided by these IT innovations and by financial innovations that allow for more accurate pricing, more securitization instruments, and better risk management models.

**PAYMENT SYSTEMS**

**Debit Card**
Debit Card is a plastic card which provides an alternative payment method to cash when making purchases. Functionally, it can be called as electronic cheque, as the funds are withdrawn directly from either the bank account or from the remaining balance on the card.

**Credit Card**
A credit card is a part of the system of payments is named after the small plastic card issued to users of the system. It is a card entitling its holder to buy goods and services based on the holders promise to pay for this goods and services. The issuance of the card grants a line of credit to the consumer (or the user) from which the user can borrow the money for payment to a merchant or as a cash advance to the user.

**Internet Banking**
It is a service provided by an banks so that people can find out information about their bank account, pay bills, etc. using the internet. Internet banking allows you to conduct bank transactions online, instead of finding an bank and interacting with a teller. In a broad sense, it is the use of electronic means to transfer funds directly from one account to another account, rather than by cheque or cash.

**Auto Mated Teller Machine**
ATMs are widely used electronic channels in banking. It is operated by plastic card with it is special features. It is computer controlled device at which the customers can make withdraws, check balance without involving any individuals. ATM can be interior (i.e located in the branch premises) or exterior (located anywhere outside the branch premises).

The banks inresad a penetration further with the total number of ATMs reaching 0.15 million in 2018. However, there was a declined in growth of ATMs of both public sector banks as well as private banks. Public sector bank recorded a growth of 16.7 per cent during 2017-18 maintaining a share of around 70 percent in total number of ATMs.

**Demat**
Demat account, the abbreviation for De-Materialized account, is a type of banking account which de-materializes paper based physical shares. The de-materialized account is used to avoid holding physical shares.

**RTGS**
Real Time Gross Settlement is an electronic form of fund transfer where the transmission takes place on areal time basis. Here the words “real time “ refers to the process instructions that are executed at the time they are received, rather then at some later time. On the other hand gross settlements means the settlement of funds transfer instructions occurs individually (on an instruction by the instruction basis).

**NEFT**
National Electronic Fund Transfer is an Indian system of electronoric transfer of money from one bank or bank branch to another. Under NEFT individuals, firms and corporates having an account with any other bank branch in the country participating in the scheme. The funds under NEFT can be transferred by individuals, firms and corporates maintaining account with an bank branch. Even individual not having a bank account can deposit cash at the NEFT-enabled branches with instructions to transfer funds using NEFT. However, such cash remittances will be restricted to a maximum of Rs.50, 000/- per transaction. Such walk-in-custumers have to furnish full details including complete address, telephone number, etc. NEFT, thus, also help in transfer of funds even without having a bank account. This is a simple, secure, safe, fastest and cost effective way to transfer funds especially for Retail remittances.

What are the minimum and maximum amount of remittance under RTGS and NEFT?
Electronic Clearing Service is a retail payment system that can be used to make bulk payments/receipts of a similar nature especially where each individual payment is of a repetitive nature and of relatively smaller amount. This facility is meant for companies and government departments to make/receive large volumes of payments rather than for funds transfers by individuals.

Challenges in Banking Sector

Developing countries like India, has a huge number of people who don’t have access to banking services due to scattered and fragmented locations. But if we talk about those people who are availing banking services, their expectations are raising as the level of services are increasing due to the emergence of Information Technology and immense competition between the services and products provided by different banks. Since, foreign banks are playing in Indian market, the number of services offered has increased and banks have laid emphasis on meeting the customer expectations. India's banking sector has made rapid strides in reforming and aligning itself to the new competitive business environment. The major challenges faced by banks today are as to how to cope with competitive forces and strengthen their balance sheet. Today, banks are groaning with burden of NPA’s. The growth led to strains in the operational efficiency of banks and the accumulation of nonperforming assets (NPA’s) in their loan portfolios.

Regulatory requirements continue to increase, and banks need to spend a large part of their discretionary budget on being compliant, and on building systems and processes to keep up with the escalating requirements. Already electronic transfers, clearings, settlements have reduced translation times. To face competition it is necessary for banks to absorb the technology and upgrade their services. The RBI and Government of India kept banking industry open for the participants of private sector banks and foreign banks. The Indian banking sector was introduced to competition when, in accordance with the suggestions of the first Narasimham Committee, entry was deregulated and both domestic and foreign banks were allowed to expand their branch networks. Due to this lowered entry barriers many new players have entered the market such private banks, foreign banks, non banking finance companies, etc. The foreign banks and new private sector banks have spearhead the hi-tech revolution.

The impact of globalization becomes challenges for the domestic enterprises as they are bound to compete with global players. The numbers of Foreign Banks have become a major challenge for Nationalized and private sector banks.

Financial inclusion has become a necessity in today’s business environment. Whatever is produced by business houses, that has to be under the check from various perspectives like environmental concerns, corporate governance, social and ethical issues. In India, RBI has initiated several measures to achieve greater financial inclusion, such as facilitating „Basic savings bank depositaccounts” and GCCs for small deposits and credit.

CONCLUSION

The Banking sector in India has become stronger in terms of capital and the number of customers. It has become globally competitive and diverse aiming, at higher productivity and efficiency. Exposure to worldwide competition and deregulation in Indian financial sector has led to the emergence of better quality products and services. Reforms have changed the face of Indian banking and finance. The banking sector has improved manifolds in terms of Technology, Deregulation, Product & Services, Information Systems, etc. The pre and post liberalization era has witnessed various environmental changes which directly affects the aforesaid phenomena.

Banks have to adopt a holistic approach to fulfill the ever changing needs of customers and to grab a better market share. Development of sophisticated products with low cost technology is the key. This calls for in-depth analysis of customer needs the market and competitor trends. This analysis plays a very important role in devising new strategies, products and services. The better the banks understands their customers, the more successful they will be meeting their needs.

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New Payment Technology

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PAYMENT TECHNOLOGY
First issued in 1966 by MasterCard in the US, the common credit card payment system is a type of electronic payment system that involves the use of a plastic card with a magnetic stripe (or more recently, a chip) that retains information of the cardholder’s credit account made with a bank or other financial institution.

MEANS OF PAYMENT
The way that a buyer chooses to compensate the seller of a good or service that is also acceptable to the seller. Typical payment methods used in a modern business context include cash, checks, credit or debit cards, money orders, bank transfers and online payment services such as PayPal.

TYPE OF PAYMENT
“Provisioning involves the transfer of money from one account to another, and involves a third party. Credit card, debit card or ACH (Automated Clearing House) disbursements are all electronic payments methods.”

Some examples of payment methods
- Credit and debit card payments
- Direct debit payments
- EFTPOS payment
- Online payments (eg PayPal)
- Cash
- Cheque
- Money order payments
- Gift cards and vouchers
- Bitcoin and digital currencies

TERMS OF PAYMENT
The conditions under which a seller will complete a sale. Typically, these terms specify the period allowed to a buyer to pay off the amount due, and may demand cash in advance, cash on delivery, a deferred payment period of 30 days or more, or other similar provisions.

MODE PAYMENT
- Means by which a payment is made, such as cash, cheque or credit card. Frequency with which a sum is paid, such as monthly, quarterly, or annually.

TRENDS OF PAYMENT
- Adoption of digital payments is on the rise with instruments such as wallets, card, and mobile becoming mainstream.

Digital Payments Landscape

- Instant payments are potential alternative to existing instruments while a few challenges still exist

Challenges in implementing instant payments

- Banks need to adopt a transformational approach to address the dynamics of regulatory landscape

Transformational Approach Needed by Banks
Regtechs and regulatory sandboxes emerge as key themes in the regulatory compliance landscape

Emergence of RegTechs and regulatory Sandboxes

- Implementation of instant payments and Basel -III norms could trigger changes in liquidity management of banks and corporates

Impact of Liquidity Management

- Technology and regulatory initiatives are including transformation in cross – border payments domain

Innovation in cross-border payments

- Fintech activity in corporate and retail domain can disrupt payments analytics and authentication

FinTech Disruption in Payments

- Adoption of open APLs is leading to paradigm shift in payments through third-party and industry initiatives

Advantages of Open APIs

- Increased threat of risk and fraud have made security and authentication top priorities for payment firms

Increasing focus on Security and Authentication
Transformation of back-end payments systems is still high priority for firms to support front-end innovation.

Transformation Road Map for Back – End Processing

MOBILE PAYMENTS
Mobile payment generally refer to payment services operated under financial regulation and performed from or via a mobile device.

TYPES OF MOBILE PAYMENTS
- SMS Payment
- Mobile wallets Payment
- NFC Payment
- WAP Payment

MOBILE PAYMENT BENEFITS FOR BUSINESS
- Ability to accept payment away from their home base
- Branding
- Social/location marketing
- Set-up can be (depending on the platform) quick and simple
- Cost saving

MOBILE PAYMENT BENEFITS FOR CONSUMER
- Convenience
- Access to deals and offers
- Social networking
- Ability to exchange funds with other individual

NEXT-GEN PAYMENT PROCESSING TECHNOLOGIES
- EMV credit cards
- Contactless RFID credit cards
- Mobile wallets
- Apple pay
- Android pay
- New payment processing architectures

EMV Credit cards:
Also called Chip-and-PIN Cards, these cards features a chip that stores a cryptogram that detects modified transaction. It also requires a PIN for extra authentication.

Contactless RFID Credit Cards:
This payment technology uses passive radio frequency identification that allows cardholders to wave the cards in front of RF terminals to complete transactions.

Mobile wallets:
First launched in Japan in 2004, this technology works on NFC enabled smartphones, and has since been implemented by Google and Apple through their mobile platforms.

New Payment Processing Architectures:
Three next-gen architectures designed to improve secure mobile payments.
- Encryption and tokenization
- Cloud-based POS system
- Secure element systems

Credit card payment system:
Consumer: The card holder who purchases goods and services using the credit card.

Merchant: Goods and services provider who accepts credit cards payments.

Issuer: Bank or financial institution that issues credit card to consumers.

Acquirer: Bank that processes and settles merchant’s credit transactions with an issuer.

Card brand: Visa, Master card,American express (AMEX). These are brands whose networks are used to facilitate interactions between acquirers and issuers when authorizing and setting transactions.

Payment Service Provider (PSP): A third party service provider who handles payment transaction between merchants and multiple acquirers.

Payment switch: In-house or third party service providers who provide routing services between merchants and multiple PSPS.

ELECTRONIC PAYMENT
An e-commerce payment system facilitates the acceptance of electronic payment for online transactions. Also known as a sample of electronic data interchange (EDI),

E-commerce payment systems have become increasingly popular due to the widespread use of the internet-based shopping and banking.

ALTERNATIVE PAYMENT METHOD
Alternative payments refers to payment methods that are
used as an alternative to credit card payment. Most alternative payment methods address a domestic economy or have been specifically developed for electronic commerce and the payment system are generally support and operated by local banks.

NFC PAYMENT
NFC (near field communication) is the technology that allows two devices-like your phone and a payments terminal-to talk to each other when they’re close together. NFC is the technology that enables contactless payments.

NFC PAYMENT METHOD
NFC is a type of radio frequency identification technology that allows your smartphone and a payments device to talk to each other wirelessly and complete the appropriately named contactless payment. NFC transactions are just as secure as EMV, but they’re a lot faster.

Telegraphic Transfer
A telegraphic transfer (TT) is an electronic method of transferring funds. It is utilized primarily for overseas wire transactions. These transfers are used most commonly in reference to CHAPS (Clearing House Automated Payment System) transfer in the U.K banking system.

TYPES OF E-COMMERCE PAYMENTS
- Credit card
- Debit card
- Smart card
- E-wallet
- Net banking
- Mobile payment
- Amazon pay

**TIPS FOR USING ONLINE PAYMENT METHODS**
- Protect customer information
- Shop around
- Use encryption
- Train your employees

**BENEFITS OF ONLINE PAYMENTS**
- Low labour costs
- Convenience for online sales
- Automatic
- Fast transaction speed
- Low risk of theft

**DISADVANTAGES OF ONLINE PAYMENTS**
- Service fees
- Inconvenient for offline sales
- Reliance on telecommunication infrastructure
- Vulnerability to cybercriminals
- Technical problems

**CONCLUSION**
- Technology has inarguably made our lives easier.
- It has cut across distance. Space and even time
- One of the technological innovations in banking, finance and commerce is the Electronic payments.
- Electronic payments (e-payments) refers to the technological breakthrough that enables us to perform financial transactions electronically, thus avoiding long lines and other hassles.
INTRODUCTION

Payment technology is evolving fast. Which came first, the change in technology and payment gateways or the change in the consumer? They’re hand in glove. So too are the hardware and software configurations that affect how you accept credit cards, plan for data security and fraud protection, decide among your hardware options and even the merchant services that you choose.

NEW PAYMENT TECHNOLOGY

It’s that time of year again. No matter how much I complain that silly lists of what will be big in the New Year are trivial and superficial and not really representative of a more detailed analysis of key trends … I still feel I have to annoy my colleagues at Consult Hyperion into giving me a few ideas so that I can surf the end-of-year blog wave.

As you know, I’m all about new technology at the point of sale or service, so I’m going to choose five areas where new technology will make a significant difference to retail financial services – not only payments – over the coming year.

I’m playing the same game as always here. I don’t want to give away any of the really cool stuff that our teams are working on for clients in business, NGO and government sectors right now, but I do want to make predictions that I already sort-of know will come true because we are already working with the technologies so that I can look clever! I’m sure you all understand how this works. Anyway, here goes…

RegTech. A number of the new technology projects that we have been involved with recently have come to a similar conclusion, which is that the use of new technology to reduce the cost of transactions is a struggle, but the use of the new technology to reduce the cost of regulating the transactions has a much better business case.

For many of our clients, the costs of regulation are both high and out of control. If blockchain or cloud or big data or biometrics or whatever can do anything to address the spiraling costs of compliance, they will have significantly more impact on the transaction space than if they could deliver a marginal reduction in transaction costs.

Digital identity. One of the key RegTechs, if not the key RegTech, is digital identity. It has finally risen to the top of the agenda and this year it will finally change the way business works. I notice that Karen Webster has come to a similar conclusion in her piece about the major trends for next year.

Indeed. What’s more, implicit in this prioritization, is the start of the identity wars as various constituencies struggle to deliver the mass-market identity solutions that we need. In some areas, it may be the government that does this, in other areas it may be the banks. But in some areas, it may be the big five: Facebook, Google, Amazon, Microsoft or Apple. Either way, there are big implications for our clients’ long-term strategies.

PSD2 (still). One of the immediate needs for digital identity infrastructure is to help with the delivery of PSD2 in Europe. Along with the Secure Customer Authentication directive, a practical identity infrastructure is an urgent requirement if the industry is going to make open banking and API access work cost effectively.

Right now, this is all a bit of a mess because the “standards” that the industry is waiting for are being delayed, and it seems to me that the timescales will be further extended in the New Year. However, it is still possible for banks to develop their strategies around the demands of PSD2 even if the details of the specific standards are not yet known.

Paying on the go. A key use of open APIs will be payments, and very likely mobile payments. Mobile
payments are coming front and center as a means to authorize access to payment accounts. Not for tap-and-go NFC but for the next generation of retail, transit, utility and other payments across all channels. As everyone has been saying, payments are vanishing inside the mobile phone and whether it is ordering your Starbucks via a voice interface or jumping out of an Uber or shopping at an increasing number of websites, the transaction will complete because of the identification and authentication (I tend to label these “recognition” for short) functionality of the mobile. Since the mobile delivers both convenience and security it seems to me unstoppable in this regard.

It is natural for retailers to want to manage the shopping experience in order to deliver the best possible service to their customers. As the bumper sticker says, they want to go from check-out to check-in. One of the implications of this shift for our clients is that they will be delivering services to mobile app developers rather than end customers! Testing these mobile apps to make sure that they have the security necessary for the mass market needs specialist skills that Consult Hyperion has and that customers can rely on.

Invisible POS. In many of the markets where we provide professional services and indeed software to the transactions value network, the day when non-cash transactions will no longer be dominated by cards is now within the strategic planning horizon.

I’m not expecting the Amazon Go science fiction model to dominate world retailing any day soon, but the combination of mobile apps, instant payments and alternative payment solutions will combine to see volume shift away from the card dip, swipe or tap. Card payments (by card, by token etc) will continue to grow but as more and more of them vanish inside apps, so the nature of the card industry and the shape of the value networks will shift.

When customers check in and then check out without plastic in their hands, the point of sale will undergo fundamental change. The competition between payment methods will be subject to new dynamics that are not yet visible or understood. Trying to introduce a new payment scheme to Tesco’s stores is one thing, but introducing a new payment scheme inside the Tesco app (with no changes to the stores, POS or any other infrastructure) is quite another. Our knowledge of both new payment methods and new POS environment help clients to make to informed decisions about their future retail environments.

What does this mean for our clients for the coming year? Given that, by and large, we work for the incumbents who currently dominate their markets, whether banks or card issuers or acquirers or retailers or government agencies, it’s all about linking these key trends together at a strategic level in order to be able to take advantage of the opportunities offered by the new technologies at the tactical level, working with new players where necessary, to stay on top.

My feeling is that these strategic trends will interact to cause some pretty interesting changes in our markets across the coming year, driven above all by the absolute necessity to restore sanity to the cost-benefit calculations around compliance. It will be regulatory pressures, not technology drivers, that shape most decisions in the next few months but we understand how to make effective use of new technology in responding to those pressures so that’s all good. Here’s to another great year in the world of secure electronic transactions

Contactless payments
Debit and credit cards may never go away, but swiping them just might. Contactless payments rose 164 percent in the U.K. last year, they doubled in Canada in 2015, and 53 percent of Australians have made a contactless payment. We expect the U.S. to follow suit as more merchants upgrade their point-of-service terminals to accept chip cards, and along with them, contactless payments.

Put a finger on authentication
Rather than forcing customers to tap in their usernames and passwords every time they want to make an online transaction, NCR’s Digital Insight developed TouchID, which allows customers of financial institutions to log in to their bank accounts with nothing more than their fingerprints. In addition to being a uniquely accurate identifier, fingerprints are infinitely more difficult to lose than a password—and much harder to hack, too.

Voice-activated transactions
Capital One customers who use Amazon gadgets can simply ask the virtual assistant Alexa to take care of financial transactions for them. As with fingerprint technology, this innovation saves consumers the hassle of remembering yet another password and going through a tedious login procedure every time they want to make or receive a payment. In the future, especially as voice recognition technology improves, we expect this method of sending and receiving money to gain more traction.

Far from being mutually exclusive goals, efficiency and security are tied tightly together in the world of payments. As we develop the technology to move away from passwords that can be guessed or stolen to more unique identifiers such as voices, fingerprints, and sensors that eliminate point-of-service terminals, we also move toward a more secure future. The very things that will make consumers’ lives easier will also protect them—a win-win if ever there was one.
New payment forms emerging
Digital commerce is no longer restricted to computers or smartphones. There are now a plethora of things, including connected devices, appliances, devices, clothing, fashion accessories and sensors, all with the potential to disrupt commerce and usher in new payment form factors. Consumers also are shifting from type to voice interfaces with personal assistants powered by the established smartphone and emerging wireless speaker categories driving this uptake. Euromonitor International estimates that nearly 81 million wireless speakers, such as Amazon Echo, will be sold globally in 2017, with that category expected to expand 84% from 2017 to 2021.

As a result, payments are becoming more of a commodity in the commerce experience. Consumers expect frictionless checkout experiences combined with the same level of security across all devices as exists today with other more established payment forms. “Today’s consumers are smarter and have higher expectations than ever before,” said Kiki Del Valle, Mastercard’s senior vice-president of commerce for every device. In an effort to promote security in this digital era, Mastercard unveiled a suite of APIs for card issuers that will provide consumers with a single view of where their cards are stored across all digital devices. Consumers are able to more easily control how, when and where their cards are used when accessing their card issuer’s mobile banking app. Consumers also can remotely deactivate cards or set spending controls at the device level. “We are providing the consumers with the tools they need in the Internet of Things era,” Del Valle explained.

Artificial intelligence’s big day
While companies have been collecting petabytes of data for years, the reality is that most struggle to make sense of it all. At its lowest common denominator, artificial intelligence (AI), allows brands to better synthesize data and incorporate those learnings to improve the commerce experience. AI, which refers to technologies capable of performing tasks normally requiring human intelligence, goes back centuries. While AI technologies were commercially available by the 1980s, it was not until the turn of this century that the emerging machine intelligence trend truly took off. Now the confluence of three powerful drivers, including exponential data growth, more sophisticated distribution networks and smarter algorithms, have propelled artificial intelligence to the center stage.

FUTURE TECHNOLOGY
To achieve our vision of digital equality, we need to understand how new technologies are shaping society; where they present opportunities to make people’s lives better, and indeed where they threaten to create harm. To this end, we have commissioned a series of white papers examining three key digital trends: artificial intelligence, algorithms and control of personal data. The papers focus on low and middle-income countries, which are all too often overlooked in debates around the impacts of emerging technologies.

The series addresses each of these three digital issues, looking at how they are impacting people’s lives and identifying steps that governments, companies and civil society organisations can take to limit the harms, and maximise benefits, for citizens.

We will use these white papers to refine our thinking and set our work agenda on digital equality in the years ahead. We are sharing them openly with the hope they benefit others working towards our goals and to amplify the limited research currently available on digital issues in low and middle-income countries. We intend the papers to foster discussion about the steps we can take together to ensure emerging digital technologies are used in ways that benefit people’s lives, whether they are in Los Angeles or Lagos.

Bill pay
Allowing millennials to use their mobile devices to access and pay bills makes for more timely payments. Especially for student loans, mobile bill pay allows students to pay their bills in ways they’re more comfortable with, which will affect the bottom line of collection agencies.
Mobile payments also offer a way to reduce accounts receivable processing costs associated with checks. Electronic bills, coupled with mobile bill payment options, let millennials and other consumers receive a bill on their smartphone and use the same mobile channel to make payment.

Meteoric rise of FinTech
FinTech, short for Financial Technology, comprises cutting edge technology to support and enable banking and financial services. With the adoption of even more innovative technologies like artificial intelligence and machine learning, the FinTech ecosystem is evolving at increasing rates. In the first quarter of 2017, US venture capitalist-backed FinTech startups raised $1.1 billion across 90 deals (CB Insights Global Fintech Report).

As fast as FinTech is moving, major financial services enterprises are moving to partner with FinTech companies. Per a PriceWaterhouseCoopers Global FinTech Report 2017, 88% of established financial services companies are concerned they will lose revenues to new FinTech innovators.

The impact of Blockchain
Blockchain technology is the rising star in FinTech. With the potential to disrupt the way every industry manages its
data, not just financial services, Blockchain is the transparent, unchangeable online ledger that is virtually hack-free. With tighter regulations and its inability for hackers to crack, Blockchain technology can help larger financial services companies counter the impact of FinTech innovators.

CONCLUSION

The Internet development has become a key driver to induce demand of F-EDI overcoming the cost and complexity issue of electronic payments by providing low cost infrastructure, software and administrative alternatives. Security and reliability have been the new obstacles for Internet F-EDI. The security issue is being tackled by the provision of new capabilities in web based F-EDI software. However, the reliability issue stills in place because today it is intrinsic to the Internet operational characteristics.
New Payment Technologies

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Abstract: Digital commerce is no longer restricted to computers or smartphones. There are now a plethora of things, including connected devices, appliances, devices, clothing, fashion accessories and sensors, all with the potential to disrupt commerce and usher in new payment form factors. Consumers also are shifting from type to voice interfaces with personal assistants powered by the established smartphone and emerging wireless speaker categories driving this uptake. Euromonitor International estimates that nearly 81 million wireless speakers, such as Amazon Echo, google tez payment service in India has gotten a major update that allows users to pay their utilities and other bills via the app.phonepe is a fin-tech company headquartered in Bangalore India. it provides online payment system based on unified payments interface (UPI), which is a new process in electronic funds transfer launched by national payment corporation of India. "as a result" payments are becoming more of a commodity in the commerce experience. Consumers expect frictionless checkout experiences combined with the same level of security across all devices as exists today with other more established payment forms. New payment systems are credit cards and debit cards, key fobs, smart cards, or other devices, including smartphones and other mobile devices, that use radio-frequency identification (RFID) or near field communication (NFC, e.g. ATAR pay, Samsung Pay, Apple Pay, Android Pay, Fitbit Pay, or any bank mobile application that support Contactless payments for making secure

PAYMENT HISTORY ANALYSIS

The review of payment patterns within an accounting area, such as accounts receivable. By reviewing a payment history, a company could identify practices that could increase collections and reduce the time between billing and payment, as well as identifying activities that are not undertaken properly, such as the prompt delivery of a bill.

Every technology has its advantages and disadvantages, and advances in banking are no different. Accessing your money through an automatic teller machine (ATM) anytime you like is convenient. On the other hand, that freedom can allow easier access to your money for someone who has stolen your ATM card. These changes are here to stay, so you'll want to understand the benefits and drawbacks of banking technology to figure out how best to deal with them.

New technology in banking is already transforming the financial world, and the traditional banking landscape is set to rapidly change in the next five years. Safety features, such as advanced cryptography and biometrics, will help protect against bank scams, and remote applications will make it easier than ever to do your banking without ever visiting a branch — but if you do, the experience is likely to be much more customer-friendly. Here’s a look at the how banking technology will change the way your money is handled.

1. Blockchain Technology
Blockchain technology is set to fundamentally transform banking and financial services. It decentralizes financial management from a central authority to a widespread network of computers. Financial transactions are broken down into encrypted packets, or “blocks,” which are then added to the “chain” of computer code and encrypted for enhanced cybersecurity — it’s been compared to “email for money” by blockchain startup CEO Blythe Masters

2. Upgraded ATMs
ATMs transformed the banking system when they were first introduced in 1967. The next revolution in ATMs is likely to involve contactless payments. Much like Apple Pay or Google Wallet, soon you’ll be able to conduct contactless ATM transactions using a smartphone

3. Proliferation of Non-Banks
Banks are hoping that technology will allow them to deliver a faster, more transparent experience to consumers. A large portion of their resources, however, is necessarily dedicated to security, compliance, and other industry-specific requirements, which has allowed non-banks — or financial service providers that are not regulated by the banking industry — to flourish, according to a 2016 report from market intelligence firm Greenwich Associates

Disruptions in Banking Sector in the Current Scenario
4. Apple Store-Style Experience
The in-bank experience of the future might be more like shopping at an Apple store. Because so many people now can download user-friendly banking apps or easily find an ATM to handle basic banking transactions, the typical in-bank customer today is seeking help involving a personal interaction.

5. Automated Financial Services Employees
The rise of financial technology will likely result in the reduction of in-bank personnel. A 2016 report from Citigroup indicated that a whopping 30 percent of bank jobs might be lost by 2025 due to the automation of retail banking services. Even behind the front line, financial services employees might step aside as robo-advisers that manage your money continue to grow in popularity.

6. Mobile and Digital Banking
The mobile and digital transformation in banking has only just begun and growth is already explosive. Banks are investing heavily in digital banking technology, in which customers use mobile, web or digital platforms to use banking services.

7. Partnerships
Although banks can pour lots of money into technology, the fastest way to deliver financial innovation in the future is likely going to involve strategic partnerships. Fast-growing companies that already have new-wave fintech or social media platforms in place could make excellent partners for traditional banks seeking to enhance customer experience.

THE NEW PAYMENT FUTURE:

3 technologies leading the way
Changes in consumer behavior continue to be rapid, disruptive, and largely driven by technology influences, such as mobile devices, big data, the cloud, IoT and machine learning. Simultaneously, security breaches are growing and continue to place both consumers and businesses at risk.

While cash and credit cards may never disappear entirely, this convergence of forces is driving one of the most profound shifts to how we pay for goods and services, challenging both financial institutions and retail providers to adjust their strategy for the future of payments. Here are the three leading technologies paving the way.

Contactless payments:
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A payment system is any system used to settle financial transactions through the transfer of monetary value, and includes the institutions, instruments, people, rules, procedures, standards, and technologies that make such an exchange possible. A common type of payment system is the operational network that links bank accounts and provides for monetary exchange using bank deposits.

Payment in banking:
What makes a payment system a system is the use of cash-substitutes; traditional payment systems are negotiable instruments such as drafts (e.g., checks) and documentary credits such as letters of credit. With the advent of computers and electronic communications a large number of alternative electronic payment systems have emerged. These include debit cards, credit cards, electronic funds transfers, direct credits, direct debits, internet banking, and e-commerce payment systems. Some payment systems include credit mechanisms, but that is essentially a different aspect of payment. Payment systems are used in lieu of tendering cash in domestic and international transactions and consist of a major service provided by banks and other financial institutions.
Payment systems may be physical or electronic and each has its own procedures and protocols. Standardization has allowed some of these systems and networks to grow to a global scale, but there are still many country- and product-specific systems. Examples of payment systems that have become globally available are credit card and automated teller machine networks. Specific forms of payment systems are also used to settle financial transactions for products in the equity markets, bond markets, currency markets, futures markets, derivatives markets, options markets, and to transfer funds between financial institutions both domestically using clearing and real-time gross settlement (RTGS) systems and internationally using the SWIFT network.

The term electronic payment refers to a payment made from one bank account to another using electronic methods and forgoing the direct intervention of bank employees. Narrowly defined electronic payment refers to e-commerce—a payment for buying and selling goods or services offered through the Internet, or broadly to any type of electronic funds transfer.

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A Study on New Payment Technologies in Banking

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ABSTRACT A Core function of any banking system is the provision of payments. However, a greater number of non-banks are becoming part of the payments landscape. Payments can be made via fiat or crypto currencies, bank credits or deposits, or funds transfers on the books of non-banking payment providers. With the explosive growth of the internet, new payments technologies have also been introduced. The various modules of the payment system and how they interface with each other are shown. Indian banking technology intensive solution to increase revenue enhances customer experience, optimize cost structure and manage enterprise risk. However, there is a wide variation in the technology agendas and implementation capability across different players of the banking industry. In this article, older payment innovations are compared and contrasted with newer ones. Eight necessary attributes for successful payments innovation are identified and discussed. While there have been extraordinary technologies advancements that will lead to significant changes in the way we pay for goods, the basic attributes necessary for successful payment innovations have changed life.

Keywords: New payments technologies, WAP, EBPP, Advancement in banks

INTRODUCTION

The term banking technologies refers to the use of sophisticated and communicated technologies together with computer science top enables banks to offer better services to its customers in secure, reliable and affordable manner and sustain competitive advantage over other banks. Banking Technologies also subsumes the activity of using advanced computer algorithms in unraveling the patterns of customer behaviors by shifting through customer details such as demographic, psychographic and transitional data. This activity also known data mining, helps banks achieve their business objective by solving various marketing problems much as customer segmentation, customer scoring, target marketing, Market-basket analyses, cross-sell, up-sell, customer retention by modeling churn etc.

The use of computer networks, security algorithms in its transactions, usage of ATM and credit cards, internet banking, Tele banking and mobile banking are all covered by this dimension. The advance s made in information and communication technologies take care of its dimension. The word banking technologies, banking refers to the economic, financial, commercial and management aspects banking while technologies refers to information and communications technologies, computer science and risks quantification and measurement aspects.

Commercial activities on the internet have increased in tandem with the fastest growth of the internet itself. Commerce is increasingly occurring via mobiles devices across the national borders at all hours of the day. While advancement technologies increased connectivity among the buyers and sellers, this advancement has also changed the way pays for goods and services albeit at a slower rate.

Banks and non-banks are innovating to make the payments process more convenient, efficient, and profitable along with making electronic payments available to more buyers and sellers engaged in various activities. At the core of any payment system is an interbank payment system that slows banks to transfers payments between payments. The interbank payment system can be operated by the central bank, a consortium of banks, are non-banks. The other payment networks may net payments by financial institutions and use an interbank payment system to settle residual amounts among the financial institutions. Example of such networks include master card and visa that use ACH and fed wire, the US real time gross settlement system, to complete the settlement process the United States. Newer payments providers may built upon payment called ACH.
MEANING OF PAYMENT TECHNOLOGIES
A payment system is any system used to settle financial transaction through the transfer of monetary value, and includes the institutions, instruments, people, rules, procedure, standards and technologies that make such an exchange possible. The first payment technologies first issued in 1966 my Master card in the U.S; the common credit card payment system is a type of electronic payment system that involves the use of plastic card with a magnetic stripe that retains information of the cardholders’ credit account made with bank or other financial institution. The cardholder uses the card to pay for products and services in lieu of cash and the transaction are logged by the banks as debt to be paid off at a predetermined time.

BENEFITS OF PAYMENT TECHNOLOGY
INTEGRATE AND INCREASE INCENTIVE PRPGRAMS.
One of the biggest benefits of using mobile payment option is the ability it integrate loyalty and incentive programs into mobile payment applications. Instead of customers having to keep up with punch cards or key ring tags, all of their information is stored in the application each time they make a purchase with their mobile device. “If business use technology to link a payment to their points or other loyalty programs then it adds value to the customer. This makes the customer want to return, which then increases revenue”.

ABILITY TO OFFER CREDIT CARD PAYMAENTS.
Previously, many small businesses, especially those operating at remote locations such as farmers market or a food truck, were unable to accept credit card payments. Being a cash-only business often decreased sales because customer without enough cash on hand were unable to buy their products. So when a cash-only business can start to accept credit card payments through a mobile payments program, they immediately increase their customer base and increase sales.

INCREASING SPEED OF CHECKING CUSTOMERS OUT.
Customers like quick service, especially when paying since that is typically their least favorite part of the shopping or dining experience. Most of the customers and staff find that it’s considerably quicker to pay with a mobile device than a credit card. Customers typically are more willing to return if they don’t have to wait long time in line.

TRACK CUSTOMER TRENDS AND INVENTORY.
A Common struggle for small businesses is tracking inventory and customer behavior. But with the mobile payment services, you can automate these processes and better serve your customers. “Small businesses using mobile payments can now track what product and services they are selling to understand customers demand. Not only can they now capture payment information, but they can learn about their customers and use that information to improve service”.

ADVANCE NEW PAYMENT TECHNOLOGIES.
- Biometric payment
- Mobile wallets
- NFC payments
- EBPP(Electronic bill presentation and payment)
- WAP payments
- Credit Card payments

BIOMETRIC PAYMENT
Biometric payment is a point of sale technology that uses biometric authentication to identify the user and authorize the deduction of funds from a bank account. Fingerprint payment, based on finger print scanning, is the most common biometric payment method. Often, the system uses two-factor authentication, in which the finger scan takes the place of the card swipe and the user types in a PIN (Personal ID number) as usual.

MOBILE WALLET
A mobile wallet stores payment information on a mobile device, usually an app. A mobile wallet can utilize different technologies in the payment process, most frequently Near Field Communication, but other modalities such as QR codes have been used by some services. A digital wallet services like Apple Pay, cuts across several categories, allowing payment with the Apple Pay app on card terminals, in app purchases and on the web.

NFC PAYMENTS
Near Field Communication payments area growth area in the field of mobile phones communicate with each other and with NFC enabled points of sale, using radio frequency identification. The mobile phones don’t have to touch the point of sale or each other to transfer
information that is money, but they have to be fairly close within four inches per centimeter of each other. It is a wireless Application Protocol is a technical standard for accessing information over a million wireless networks. A WAP browser is a web browser for mobile phones that uses this protocol. In this case, it’s just a generic description of accessing the internet.

WAP PAYMENTS

WAP payments simply means using the wireless Application Protocol facility on your smartphone to connect to the internet and then using an online payment method such as PayPal, Google Wallet or Yahoo Wallet or simply entering your credit card details into the payment box on a company’s websites. It is an alternate payment mechanism to debit or credit cards and premium SMS for billing.

CREDIT CARD PAYMENT

First issued in 1966 by MasterCard in the US, the Common Credit Card Payment System is a type of electronic payment system that involves the use of a plastic card with a magnetic stripe that retains information of the cardholder’s credit account made with a bank or other financial institution. The cardholder uses the card to pay for products and services in lieu of cash and the transaction are logged by the banks as debts to be paid off at predetermined time.

EBPP (ELECTRONIC BILL PRESENTMENT AND PAYMENT)

On the internet, electronic bill presentment and payment (EBPP) is a process that enables bills to be created, delivered and paid over the internet. The service has application for many industries, from financial services providers to telecommunications companies and utilities. Two types of EBPPs typically exists biller direct and banker-aggregator. Biller-direct refers to the electronic billing, which the company providing the good or service directly offers. Bank aggregator refers to paying multiple bills electronically through a bank. Many industries including financial service providers, telecommunication companies and utilities use Electronic Bill Payment services.
Credit cards and debit cards are the popular ways to pay right row, but some new technologies are showing up to the party, both offline and online. In one of the most interesting, Pay by Touch has had success in rolling out a biometric system that lets customers pay with swipe of their finger. And PayPal recently introduced PayPal mobile, which lets users send and receive money via cell phone text messaging and its already being used by MTV, the NBA store and other for profit and nonprofit companies

DISADVANTAGE AND RISK OF TECHNOLOGY

- As the modern technology has many advantages and benefits, it also has its own disadvantages. Everyone is now depending on new technologies and the man no longer need to think. Even if the calculator is good invention, may no longer makes mental calculation and no longer works his memory. The decline of human capital implies an increase in unemployment in some areas; devices can replace the human mind.
- The use of technology certainly needs rule and new laws. For example internet use is an individual freedom. However, the invention of the atomic bomb cannot be an individual freedom. In fact, regulations are difficult to implement when these technologies are introduced such as regulation surrounding the impending arrival of autonomous vehicles.
- If you are not comfortable using computer especially websites based programs using electronic transaction will require that you hire someone you can trust to help you set up and maintain you’re ordering and payment system. This will increase your costs. If you try to for it yourself, you will need to frequently check yours various accounts, which can cover online order taking, credit card processing, and credit card payments. E-checks, PayPal payments, shopping cart and bank accounts.

CONCLUSION

Underpinning all commerce is the settlement of monetary obligations. As commerce changes, there will be corresponding changes to the way we make payments. Emerging technologies have changed the banking industry form paper bad branch based banks to digitize and branch based banks to digitized and networked banking services. Therefore has played a big role in reducing fraud in banks which protect its clients in the world of banking and finance nothing stands still. The biggest change of all is in the scope of the business of banking. The range of services offered differs from banks to bank depending mainly on the type and size of the bank. There are certain trends that payment must consider when thinking about future payment innovations. In addition other electronic payment modules are also added to the flexibility of framework for the convenience of users.

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Abstract: Payment innovation is an online base bespoke application system. It is mainly an accounting system but it is not a conventional accounting system. The discussion policy research implementation, it argued the central bank policies oriented towards payment system reforms along with new payment product and service development by commercial banks have to play an important part in promoting technology innovation in banking.

The roll of banking is influencing innovation and analyses their link to payment system modernization. The main argument is the banks are types of technological institution having the potential to promote innovation the bank have the major innovation models and progress in payment system. It is argued the central bank policies oriented towards payment system reform, along with new payment product and service development by commercial banks have come to play an important part in promoting technological innovation in banking.

It has some specially; it is specific to pay their tuition and other semester fees online using this system. Guardian will able to pay their students fees through online and also they can able to see the student financial statement.

It has various massages option to notify transaction through mobile, emailing also own massaging system. University student payment system users will able to view receipts payments statements from any were in the world using internet. Most of systems are e-commerce system, because students have payment their fees using their bank account, credit or debit card and using their mobiles through third party payment gateway.

INTRODUCTION

Innovation is occurring at rapid rates with payment-industry enhancement being developed and implemented at a faster. While such process are available to banks, it is the start-up sector including online payment provide such as PayPal and strip that has demonstrated the highest degree of adoption. A new breed of non-bank payment innovation, ranging from fintech start-up to established non-payment industry operators.

Acceleration of innovation due to the development of web and new device for payment

- At POS: contactless card [visa pay wave], mobile phone as payment card [NFC], mobile phone as POS terminal [square], etc.
- E-commerce: web checkout [PayPal], telephone bill as payment account, SMS base money transfers.

Innovation in payment

- Innovation = product innovation [introduction of new payment service] + process innovation [cost reductions + quality of service improvements]
  - Cost reduction
  - Cost reduction of frauds
  - Transaction cost, etc.
  - Quality of service improvements
  - Convenience, simplicity
  - Customer relationship management
  - Possibilities of differentiation, etc.

Innovation payment is the process of translating an idea or invention into goods or service that creates value or for which customers will pay.

MEANING

The process of translating an idea or invention into a good or services that create value or for which customers will pay.

Payment innovation is a system that permits online payment between parties using an electronic surrogate of financial tender.

The internet is to act as an alternative form of payment that the physical cash, cheque or other financial tender.

E-money refers to money that exists only in electronic form. Some forms of e-money include: debit cards, which looks likes credit cards, enable consumers to purchase goods and services by electronically transforming fund directly from their bank accounts.
THE OBJECTIVES OF DIGITAL PAYMENT INNOVATION

An idea must be replicable at an economical cost and must satisfy a specific need the digital innovation payment is ready to use ecosystem comprising of infrastructure, partnership, collaborators, managerial and technical expertise, solution and ability to undertake specialized research.

- Future research and innovation in the area of digital payment by allowing the developer of an innovation to reap the reward of his efforts, we create an environment that encourage innovative thinking and hardwork.
- Identify and demonstrate new digital payment inclusion use cases: ATM, PAYTM, Credit card and debit card.
- The key objective of payment bank is to increase financial inclusion of offering small saving account and payment.
- The digital payment is payment of banking would be paperless.

FUNCTIONS OF PAYMENT INNOVATION

The responsibilities of the payment are set out in the Reserve bank act 1956. The act that requires the board to determine the Reserve bank’s payment system policy so as to contribute to:

- In innovation payment promoting the payment efficiency of the payment system;
- Controlling risk in the financial system; and
- Promoting competition in the market for digital payment services, consistent with the overall stability of the financial system.

In order to give effect these responsibilities, the bank has powers that are set out in two acts: the payment system regulation act 1998 and the payment system & netting act 1998.

Under the innovation payment system the bank has the power to designate payment system and to set standards and access regimes in designated system. The innovation payment set out the matter that the bank must take into account when using these powers. The payment system and netting act provides the bank with the power to give legal certainty to certain settlement arrangements so as to ensure the risks of systemic disruptions from payment system are minimum with the help of digital payment.

The foundation of the innovation payment the ability for innovators to leverage the ability to connect those devices and many other through internet that’s involves to innovate digitalized payment. That I suggested, would give everyone a blank slate to think cleverly and creatively about how to use software, apps and data to add value to the payment and commerce steam.

An interesting and potentially transformation development through innovation payment the ability for the consumer to use the same digital payments methods across every channel the shop, regardless of the device that are using to enable payment.

TYPES OF PAYMENT INNOVATION

Innovation is nothing but THINKING – “In many cases innovation in retail payment represent only increment improvement to existing and established payment service”

TIME

The consumer and retail payment sector is the fastest-moving in term of innovation and adoption of new payment capabilities. Growth in e-commerce has both facilitated and encouraged the future development of digital payments experiences, with the movement towards a “post cash” economy also being driven by a growing consumer expectation of real-time payments.

EFFICIENCY

It is efficiency in various countries something that is paid through digital payment methods, the scope for improvement by moving to best practice.

CONVENIENCE

The convenience was more associated with the number of branches on the way to work and whether you could get in touch with the online banking, whether a consumer mobile device is easily used and how quickly the financial service provider responds via email.

PRODUCTIVITY

Payment system designed to handle scale processing. Linking innovation in productivity growth in banking activities, which command little payment.

CONSUMER NEEDS

The innovation payment method reduce the predominant role that banks play in their consumers usually need to download mobile payment application. Many bank developed their own payment technology to keep customers need.

CONSUMER EXPERIENCE

Innovative payment experiment of the customer can be implemented in traditional style branches to improve customer experience. It may come as a surprise to many of us that consumers are generally satisfied with their banking relationship.
RISK
Risk taking is essential for innovation in banking system that means 90% of the innovations were failing, and most of the best did not pay off.

PERFORMANCE
Commercial banks financial performance as the key players in the banking sector the effect of the banking profitability performance of electronic based banking services.

COMPETITIVE
Digital payment strategies and operating models are critical for success in today’s competitive. The relationship between banks and their customer competitive contention in the payment innovation.

KNOWLEDGE
Payment systems exist today, so building new application on top of them should be easy and cost efficient. Drawing on their responsibility of knowledge, bank should be able to leverage existing technology to create a high-quality and product that offers new ways to conduct commerce.

WHAT IS DRIVING INNOVATION IN PAYMENTS?
1. Changing regulations
2. New technology
3. Growing and changing consumer demand
4. Demographic shift-millennial, digital natives
5. Negative trust in banks
6. More use cases
7. Ubiquity of mobile devices
8. Government support
9. Profit potential in transaction orientation
10. Entrepreneurial talent
11. Investment

THE LATEST IN PAYMENT TECHNOLOGIES
In this day today there is a changes between payment environments to educate to help them identify right solutions to grow. There are three new technologies everyone is talking about EMV chip cards, Apple pay and NFC [near field communication].

EMV stands for

E=Euro card
M=Master card
V=Visa

Instead of gold standard payment transaction processing. In USA, 2015 EMV small microchips imported, improving securities the cashier swiping a card of debit or credit card. The customer tap the card to swiping the card on sales terminal in 2014 credit card fraud losses topped $10 billion the card is our responsibility. But in October, 2015 everything changes the risk and liability are going to shift the merchants they are not adopted to EMV chips transactions. The fraud chip transactions 9EMV complaint transaction. So merchants business at risk so by embarrassing EMV chip card technology they will be protect our business and liability.

An customer feel more secure about doing business with them become complaint the merchant would need to make hardware changes as most terminal use call me a non EMV payments.

Apple pay
Apple pay is a mobile wallet makes simplicity of mobile payment with the confidence and personal information secure our personal information to store debit card or credit card detail security in digital phone and then use this system of application Instore, Inapp or E-commerce purchases affectively take our records. Instead taking your credit card out and handling to store or restaurant the apple pay enables contactless by tapping a couple of payments does not need much more time by founding display in one or two seconds in apple pay use in the store the merchant needs NFC capable device it thanks to encryption system to credit card for necessary to complete transaction. The merchant never see customers credit card number must be encrypt to complete the transaction. More safe guard along with apple finger print application make apple pay most secure payment methods.

Near field communications [NFC]:
NFC is the started stay of mobile device to establish radio communications by touching line together more than feelings apart.

For example: retail stores, the customer wants to pay with mobile wallet stored in the smart phone on tapping the phone next to the initiator device NFC enabled to create radio frequency into passive target. NFC enabled terminal payment the smartphone terminal is effectively exchange information securely about the transaction. This technology is widely embracedamong more values contact less payment has more devices at significant to added convenience for security of payments.

So what does it all meant sales agent by their big changes make great opportunities important thing of the business have benefits of switching to EMV, Apple pay and NFC very terminal to:

- Prevent the shift of liability to them
- Reduce counterfeit fraud
- Increase security
- Increase revenue through acceptance of international visitors card
- Support the way customer wants to pay
But here a great way to start the dialog with merchant about EMV and apple pay expectance is a free terminal program it’s a big topic talking about 2015

CONCLUSION

- Payment innovation is the key to the long term growth and success of an organization.
- Payment and settlement system are important part of the infrastructure supporting a nation’s economic activity so payment innovation make easy that the act of paying system through online basis.
- The main aim of e-banking is to make transaction through online.
- E-banking, phone banking, mobile banking, ATM, have become necessity and are no more factor of differentiation in urban and semi urban cities.
- Retail banking has a greater scope in India due to increase in consumerism, purchasing power of customer.
- Bankers can adopt strategies used by retail stores to very large extend to woo the customers and survive in competition.
- The strategy of bank is to provide value added service and products to the customers utilizing the internet extensively.
- Changes to design or to the risk management policies were needed to due to growth in the value of payment system.
- Shift of emphasis towards a greater control of payment and settlement risk.
- All individuals and organization can learn to use digital payment.

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Future Prospects and Challenges of Retail Banking in India

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Abstract Retail banking is when a bank executes transactions directly with consumers, rather than corporations or other banks. Services offered include savings and transactional accounts, mortgages, personal loans, debit cards, and cards. Today, retail banking is being considered as one of the most innovative financial services provided by the various commercial Public Sector Banks (PSBs), private sector and foreign banks. Retail banking has a huge potential considering the growing demand for its products namely, term deposits, consumer durable loans, auto loans, debit card, credit cards, ATM facilities, insurance, online banking, etc. The growing sector of retail lending has contributed significantly to the development of the economy. Like other developed countries, India too, has a developed retail banking sector which accounts for one-fifth of all banks credit. Retail lending across the globe has been a showcase of innovative services in the commercial banking sector. Countries, like China and India, have emerged as potential markets with changing investment opportunities. The higher growth of retail lending in emerging economies can be attributed to the rapid growth of personal wealth, favorable demographic profile, rapid development in information technology, the conducive macroeconomic environment, financial market reforms and small micro-level supply side factors. The retail banking strategies of banks are undergoing a major transformation, as banks are beginning to adopt a mix of strategies like organic growth acquisition and alliance formation. This has resulted in a paradigm shift in the marketing strategies of the banks. PSBs are adopting aggressive strategies, leveraging their branch network to garner a large share of the retail market. This article attempts to highlight the prospects and the future role of retail banking in India. Retail banking is widely recognized as an important factor for the economic development of a country. Retail banking helps the Indian banking industry by providing a wide range of innovative services. Retail loan is estimated to have accounted for nearly one-fifth of all bank credit. Over the past few years housing sector is experiencing a boom in its availability of credit. The retail loan market has decisively got transformed from a seller's market to a buyer's market. The days are gone when getting a retail loan was difficult. All the above statements bring out the speed of development that retail banking is experiencing in India. Retail banking is a very wide term that refers to the dealings of commercial banks with individual customers, both on liabilities and assets side. Mortgages, loans (e.g., personal/housing, auto and educational) on the asset side are the more important products offered by the banks. Related ancillary services include credit cards and depository services.

INTRODUCTION

Retail Banking in which banking institutions execute transactions directly with customers Typical products: savings and transaction accounts; mortgages; personal loans; debit and credit cards, etc Working principle: Law of Large Numbers; probabilistic modeling Critical success factors: Distribution – Branch, channels Branding Unit costs – cost per account, cost per transaction Pricing Risk management .The term is generally used to distinguish these banking services from investment banking, commercial banking or wholesale banking. It may also be used to refer to a division of a bank dealing with retail customers and also be termed as personal banking services According to the Report’s Customer Experience Index, which surveyed over 18,000 bank customers across 35 markets, 10% of retail banking customers are likely to leave their banks in the next six months while an additional 41% say they are unsure if they will stay or go. To re-build the customer-bank relationship, the Report finds banks can become more customer-centric more personal interactions. Retail banking what’s been good for Indian banks hasn’t been good enough for the country scorching pace of growth since liberalization: CAGR of around 30% to touch a figure of INR 9700 Billion.

Retail Banking in the World

North America continues to lead the Customer Experience Index with Canada (81%), and the United States (80%) in the lead. Italy, Saudi Arabia and China reported the largest relative gains in share of customers with positive experience this year. Fees, Mobile Capabilities, Quality of Service or Knowledge of Customers? This is the single most important factor driving customers to switch banks.
The World Retail Banking Report provides insights into customer attitudes towards retail banking using a comprehensive Voice of the Customer survey which polled over 18,000 retail banking customers in 35 countries. The survey analyzes customer experiences across 80 banking touch points that span the products and services offered, the importance of different channels for obtaining services and the transactions that occur over the lifecycle of a banking relationship. Some banks turned to consolidation as a way of cutting expenses in order to survive difficult economic conditions. Often consolidation works as intended, but it also has its limitations. Federal law prohibits any single bank in the United States from holding more than 10 percent of the U.S. customer market. When banks merge, they also make gains in their customer base. Several banks in the United States are approaching the 10-percent mark, so for those banks, further consolidation may not be a way to solve their problems. Global Retail Banking 2020 study, up to 50 percent of branches in today’s U.S. bank networks may be declared obsolete -- although not necessarily defunct -- by 2020. Given that branches constitute 75 percent of a bank’s total retail distribution costs, according to research from Capgemini, implementing smart, technologically savvy retail strategies will be critical to driving shareholder value.

The role of Retail Banking in Indian Economy
Retail banking in India is not a new phenomenon. It has always been prevalent in India in various forms. For the last few years it has become synonymous with mainstream banking for many banks. The typical products offered in the Indian retail banking segment are housing loans, consumption loans for purchase of durables, auto loans, credit cards and educational loans. The loans are marketed under attractive brand names to differentiate the products offered by different banks. As the Report on Trend and Progress of India, 2003-04 has shown that the loan values of these retail lending typically range between Rs.20,000 to Rs.100,000. The loans are generally for a duration of five to seven years with housing loans granted for a longer duration of 15 years. Credit card is another rapidly growing sub-segment of this product group. In recent past retail lending has turned out to be a key profit driver for banks with retail portfolio constituting 21.5 percent of total outstanding advances as on March 2004. The overall impairment of the retail loan portfolio worked out much less then the Gross NPA ratio for the entire loan portfolio. Within the retail segment, the housing loans had the least gross asset impairment. In fact, retailing make ample business sense in the banking sector. While new generation private sector banks have been able to create a niche in this regard, the public sector banks have not lagged behind. Leveraging their vast branch network and outreach, public sector banks have aggressively forayed to garner a larger slice of the retail pie. By international standards, however, there is still much scope for retail banking in India. After all, retail loans constitute less than seven per cent of GDP in India vis-à-vis about 35 per cent for other Asian economies — South Korea (55 per cent), Taiwan (52 per cent), Malaysia (33 per cent) and Thailand (18 per cent). As retail banking in India is still growing from modest base, there is a likelihood that the growth number seem to get somewhat exaggerated. One, thus, has to exercise caution in interpreting the growth of retail banking in India. The following away the retail Banking Contributing service to development of Indian Economy.

Credit Cards
While usage of cards by customers of banks in India has been in vogue since the mid-1980s, it is only since the early 1990s that the market had witnessed a quantum jump. The total number of cards issued by 42 banks and outstanding, increased from 2.69 crore as on end December 2003 to 4.33 crore as on end December 2004. In view of this ever increasing role of credit cards a Working Group was set up for regulatory mechanism for cards. The terms of reference of the Working Group were fairly broad and the Group was to look into the type of regulatory measures that are to be introduced for plastic cards (credit, debit and smart cards) for encouraging their growth in a safe, secure and efficient manner, as also to take care of the best customer practices and grievances redressed mechanism for the card users. The Reserve Bank has been receiving a number of complaints regarding various undesirable practices by credit card issuing institutions and their agents. The RBI and a set of guidelines would be issued which are going to pave the path of a healthy growth in the development of plastic money in India. The RBI is also considering bringing credit card disputes within the ambit of the Banking Ombudsman scheme. While building a regulatory oversight in this regard we need to ensure that neither does it reduce the efficiency of the system nor does it hamper the credit card usage.

Housing Credit
Housing credit has increased substantially over last few years, but from a very low base. During the period 1993-2004, outstanding housing loans by scheduled commercial banks and housing finance companies grew at a trend rate of 23 per cent. The share of housing loans in total non-food credit of scheduled commercial banks has increased from about 3 per cent in 1992-93 to about 7 per cent in 2003-04. Recent data reveal that non-priority sector housing loans outstanding as on February 18, 2005 were around Rs. 74 thousand core, which is, however, only 8.0 per cent of the gross bank credit. As already pointed out, direct housing loans up to Rs. 15 lack irrespective of the location now qualify as priority sector lending; housing loans are understood to form a large component of such lending.
Support to Indian middle class People
The rise of the Indian middle class is an important contributory factor in this regard. The percentage of middle to high income Indian households is expected to continue rising. The younger population not only wields increasing purchasing power, but as far as acquiring personal debt is concerned, they are perhaps more comfortable than previous generations. Improving consumer purchasing power, coupled with more liberal attitudes toward personal debt, is contributing to India's retail banking segment.

Economic superpower
Retail banking has played a role in a growing economy of India. As the growth story gets unfolded in India, retail banking is going to emerge a major driver. How does the world view us? I have already referred to the BRIC Report talking India as an economic superpower. A. T. Kearney, a global management consulting firm, recently identified India as the 'second most attractive retail destination' of 30 emergent markets.

Increasing purchasing power of middle class people
The rise of the Indian middle class is an important contributory factor in this regard. The percentage of middle to high income Indian households is expected to continue rising. The younger population not only wields increasing purchasing power, but as far as acquiring personal debt is concerned, they are perhaps more comfortable than previous generations. Improving consumer purchasing power, coupled with more liberal attitudes toward personal debt, is contributing to India's retail banking segment.

Financial market reforms
The subject matter of retail banking is of prime importance. In recent years, commercial banks have witnessed development in the form of retail lending, all over the world. The growth in the field of retail lending is primarily because of the speedy advancement in the IT sector, evolving macroeconomic environment, numerous micro level demand and supply side factors and financial market reform. This criterion is based on the market research report on retail banking

Engine of economic growth
Retail banks play a critical role in their home economies, and their activities have implications for the global economy as well. They offer critical credit functions, which largely fuel the engine of economic growth in their economies. When problems hit the retail banking sector the result is often dire economic circumstances for the economy as a whole. When retail banks are failing, little or no credit is available for credit seekers, and economic activity becomes depressed.

Mass-market banking
Retail banks offer a variety of important services to their customers. The retail banking sector is often described as a typical mass-market banking, offering services such as savings and checking accounts and all kinds of personal loans, including auto loans and student loans. Retail banks also offer mortgage services, debit and credit card services and ATM services--all of which have become essential to today's consumers.

Volume driven business
Retail Credit ensures that the business is widely dispersed among a large customer base unlike in the case of corporate lending, where the risk may be concentrated on a selected few plans. Ability of a bank to administer a large portfolio of retail credit products depends upon such factors like; strong credit assessment capability, sound documentation, strong possessing capability, regular constant follow-up, skilled human resource, technological support.

Automation of banking process
The growth in retail banking has been facilitated by growth in banking technology and automation of banking processes to enable extension of reach and rationalization of costs. ATMs have emerged as an alternative banking channels which facilitate low-cost transactions vis-à-vis traditional branches / method of lending. It also has the advantage of reducing the branch traffic and enables banks with small networks to offset the traditional disadvantages by increasing their reach and spread.

Easy and affordable access
Retail loans through a wide range of options / flexibility. Banks even finance cost of registration, stamp duty, society charges and other associated expenditures such as furniture and fixtures in case of housing loans and cost of registration and insurance, etc. in case of auto loans.

Financial Liquidity
Banks Making financing attractive by offering free / concessional / value added services like issue of credit card, insurance, etc. Continuous waiver of processing fees administration fees, prepayment charges, etc. by the Banks. As of now, the cost of retail lending is restricted to the interest costs.

Economic prosperity
The consequent increase in purchasing power has given a fillip to a consumer boom. Note that during the 10 years after 1992, India's economy grew at an average rate of 6.8 percent and continues to grow at the almost the same rate – not many countries in the world match this performance.
Changing consumer demographics
The Size of population indicate vast potential for growth in consumption both qualitatively and quantitatively. India is one of the countries having highest proportion (70%) of the population below 35 years of age (young population). The BRIC report of the Goldman-Sachs, which predicted a bright future for Brazil, Russia, India and China, mentioned Indian demographic advantage as an important positive factor for India.

CHALLENGES OF RETAIL BANKING IN INDIA

Retention of customers
According to a research by Reichheld and Sasser in the Harvard Business Review, 5 per cent increase in customer retention can increase profitability by 35 per cent in banking business, 50 per cent in insurance and brokerage, and 125 per cent in the consumer credit card market. Thus, banks need to emphasize retaining customers and increasing market share.

Rising indebtedness
India's position, of course, is not comparable to that of the developed world where household debt as a proportion of disposable income is much higher. Such a scenario creates high uncertainty. Expressing concerns about the high growth witnessed in the consumer credit segments the Reserve Bank has, as a temporary measure, put in place risk containment measures and increased the risk weight from 100 per cent to 125 per cent in the case of consumer credit including personal loans and credit cards (Mid-term Review of Annual Policy,( 2016-17).

Network management challenges
Difficulty in maintaining and optimizing the performance of retail banking networks. Illustratively, ensuring that all bank products and services are available, at all times, and across the entire organization is essential for today’s retails banks to generate revenues and remain competitive. Besides, there are network management challenges, whereby keeping these complex, distributed networks and applications operating properly in support of business objectives becomes essential. Specific challenges include ensuring that account transaction applications run efficiently between the branch offices and data centers.

Money laundering
KYC Issues and money laundering risks in retail banking is yet another important issue. Retail lending is often regarded as a low risk area for money laundering because of the perception of the sums involved. However, competition for clients may also lead to KYC procedures being waived in the bid for new business. Banks must also consider seriously the type of identification documents they will accept and other processes to be completed. The Reserve Bank has issued details guidelines on application of KYC norms in November 2017

Massive infusion of capital
While retail banks have their share of problems, it is anticipated that with the massive infusion of capital into the banking and financial services sector by the federal government's economic stimulus program, most retail banks will survive, and the smaller retail banks may seek to merge with other banks

Strategy Knowing Your Customer
service should be at the end all in retail banking. Someone has rightly said, —It takes months to find a good customer but only seconds to lose one.Thus, strategy of Knowing Your Customer (KYC) is important. So the banks are required to adopt innovative strategies to meet customer’s needs and requirements in terms of services/products etc.

Outsourcing activities
The issue of outsourcing has become very important in recent past because various core activities such as hardware and software maintenance, entire ATM set up and operation (including cash, refilling) etc., are being outsourced by Indian banks.

CONCLUSION
There is a need of constant innovation in retail banking. In bracing for tomorrow, a paradigm shift in bank financing through innovative products and mechanisms involving constant up gradation and revalidation of the banks’ internal systems and processes is called for. Banks now need to use retail as a growth trigger. This requires product development and differentiation, innovation and business process reengineering, micro-planning, marketing, prudent pricing, customization, technological up gradation, home / electronic / mobile banking, cost reduction and cross-selling. While retail banking offers phenomenal opportunities for growth, the challenges are equally daunting. How far the retail banking is able to lead growth of the banking industry in future would depend upon the capacity building of the banks to meet the challenges and make use of the opportunities profitably. However, the kind of technology used and the efficiency of operations would provide the much needed competitive edge for success in retail banking business. Furthermore, in all these customers’ interest is of paramount importance. So, it is vital for banks to improve their customer services and cut off predatory lending strategies, particularly in the area of interest on credit cards. Finally we say that retail banking is one of the most tremendous areas now days to be looked after by the banking industry as it contributes 7% to our GDP and 14% to employment.
Abstract: In this paper I have presented the transformation in banking. Digital Transformation is far beyond just moving from traditional banking to a digital world. Balancing these multifaceted priorities requires a thorough transformational approach that will impact all areas of the organization. It is a vital change that how banks and other financial institutions learn about, interacting with the and customers safely. This requires the input not just from business stakeholders and leaders, but also from other areas of the organization including operations, technology, risk, legal, human resources and communications. An efficacious Digital Transformation begins with an understanding of digital customer behavior, preferences, choices, likes, dislikes, stated as well as unstated needs, aspirations etc. Although many Hong Kong banks have started to embrace new operating model constructs, these initiatives have been largely tactical and cost-focused in nature, creating a drag on business agility and future growth. And this transformation leads to the major changes in the organizations, from product-centric to Customer-centric view study by CGI entitled, Understanding Financial Consumers in the Digital Era sheds some light on the desires of today digital consumer. Interestingly, at a time when financial institutions seem to be in a lock-step with each other, consumers are raising the bar on their expectations. The most effective way to understand and bring the organization from traditional banking to digital banking is Omni-Channel approach. Omni-channel is a multichannel approach to customer service where all the channels are tightly integrated, keeping customer in the center of the integration. As customers continue to change their channel usage patterns, banks and credit firms need to focus on delivering a seamless.

Customer experience across various touch points. More than just an axiom, Omni-channel banking is a prospect to take bottom-line on higher note by gaining insights from customers’ channels, behavior and preferences. Today’s customers are more sophisticated and tech savvy, and to cater to their specific needs, each customer needs a unique experience from banking. They want the companies to understand their unstated needs as well as their likes. So, it should come as no surprise that these customers are expecting similar kind of response and service from banking institutions too. From researching new services, opening an account, checking balance, conducting transactions, loans, credits, wealth management, customer support, delivering an Omni-channel experience has become a key to success in this competitive marketplace. The confluence of a number of major trends affecting the banking industry has pushed transformation to the top of the agenda of today’s business leaders. The pace of technological change continues to hasten, while the continued uncertainty over the health of the global economy, the threat emerging from new regulatory developments and other disruptive forces have rendered the era of one-and-done transformation a thing of the past.

INTRODUCTION:

The banking industry has undergone profound changes during the last decade. The most obvious change has been the large number of bank mergers, which have increased both the average size of banks and the area over which they operate. Other changes may also prove dramatic but at this point just getting under way—the growth of internet banking and the combination of banking with other Financial services, such as insurance and securities underwriting. The implications of these changes for the profitability and safety of banks have been widely discussed, but what do they mean for local economies? Some analyst sarguth at the changes will benefit most communities by increasing the public’s access to financial services and making it easier for banks to continue lending during regional economic downturns. Others argue that the changes will end up hurting many communities, especially smaller ones, because the large organizations created by mergers will be uninterested in serving small customers and will siphon off funds from smaller markets to lend in big cities.

Banking is changing across multiple fronts:
The banking sector remains an industry in flux. The days of leverage-inflated, 20 percent returns on equity are a thing of the past. Management is now judged by its shareholders as performing well if it is able to deliver certain benchmarks in performance related to return on capital, equity, cost as well as net income and profit that would be considered paltry by previous standards.

The concern though for banks is that even as the benchmark for their performance has been lowered, this is still often proving difficult to achieve due to increased local and global regulatory costs, sluggish economic growth and, perhaps most importantly, market
competition and emerging disruptors to the banking ecosystem. Whereas previously most banks would have relied upon reducing headcount, off shoring work or raising fresh equity to navigate a profitable path, this will no longer suffice. Balancing these competing priorities requires a transformational approach to practically all aspects of the banking sector.

The impact on mobile apps and transformation of banking:
Mobile apps are rapidly replacing branches as the customer preferred point of interaction with banks. Today, customers are choosing their banks based upon the quality of their mobile apps and the services that are enabled. In recent customer satisfaction surveys, mobile apps were shown to play significant role in keeping customer satisfied.

In addition, users today are seeking ways to consolidate their personal financial management tools and banking tools all in one application. They would like a complete view of their personal finances. The challenge today is these services are often providing by different providers with different apps. The accelerating demands for mobile apps from business units and customers are triggering a tidal wave of disruption. The disruption is a huge challenge for CIOs who must transition their banks strategies rate of their customers.

1. By50 percent of respondents say their company does not have a mobile strategy.
2. Of those companies with a mobile strategy, 45 percent say it is not aligned with IT objectives
3. 36 percent say it is not aligned with business objectives.
4. Tactics are overshadowing the development of long-term strategy.

Source: Ponemon Institute report titled The Changing Mobile Landscape in Financial Services

In addition to the technology related transformations, non-banks are entering into services once reserved for banks.

Current process
The user does a basic search on the internet for buying any financial product and post that, raises a query or request with the bank for further information. User raises the query, either through website or calling up the customer care. Based on the query and field of the query, customer representatives forwards the call to the specific department and arranges a meeting with the user. The user, then selects either video conference with the expert or the physical meeting. Before the meeting, the bank’s representative reviews user’s financial strength and income statements etc... to provide a better solution.

Limitations of current process:
- Personal assistance from bank’s perspective is must
- Separate meetings for various products
- User need to track all products separately
- Bank’s suggestion based on only user’s financial strengths
- Service based on user’s stated needs

Benefits of new process and differentiation:
- Virtual tour of the products as well as virtual human assistance
- One interaction for all the products view
- Attachment of products to user’s portfolio for easy tracking
- Bank’s suggestion based on user likes, dislikes, behavior, various searches, financials etc before even getting the user query

Enhanced process
User does a basic research on internet for buying any financial product. When the user is ready to buy the product, he/she reaches out to the bank though website/mobile/face to face. Before the user even states the query, representative keeps infront of him, the possible products’ info in which user has interest and was getting information through various channels. Bank’s representative gets this information through channel presence which technology gives the user’s insights to the representative for providing better services. The user will be able to select any one or multiple methods of the interactions (Virtual human, video conferencing, physical meeting) where bank’s representative will have the possible questions which the user might ask and the details which user might be looking for. In this single meeting, the user will get the knowledge about anyor all of the products as per the user’s choice. If the user accepts and wants to go ahead with any of the suggestion, then the bank’s representative (virtual or physical) will take the process ahead. Here, the user will provide the credentials (fingerprint, retina scan) to take the process ahead and attach this new product/portfolio to his/her personal portfolio to make the tracking easy.

TECHNOLOGY

Big data analytics and cloud:
Data will be collected from user’s web searches, social networking sites, expert review about the various financial products, past interests in the financial products or portfolio. Then this data will be connected with the financial strength of the user once the user places the request and based on the defined algorithm suitable products will be kept in front of the user. As the whole process will be automated, in just one meeting, the
user will be able to get the overall picture of all the products. As the whole data will be on cloud, linking these products with user’s personal portfolio will make the job easier an easy job and the customer will be able to access the data anytime, anywhere.

**Smart Phones/surfaces/tablets:**
These products will be used to raise requests and also, provide assistance. They also user will be able to review the portfolio of the products. Linkage with the personal portfolio will show impacts of markets up/down and opportunities & threats too.

**CONCLUSION:**

So here we can conclude by saying that as new-new technologies are being found out day by day the development in banking sector is also increasing and it helps the people more convenient of using these technology and this single touch makes a huge difference in the life of people which doesn't categories them in any different way.

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Types of New Payment System & Instruments

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INTRODUCTION:

A payment system is any system used to settle financial transaction through the transfer of monetary value, and includes the institutions, instruments, people, rules, procedures, standards and technologies that make such an exchange using bank deposits.

What makes a payment system a system is the use of cash-substitutes; traditional payment system are negotiable instruments such as drafts (e.g., checks) and documentary credit such letters of credit. With the advent of computers and electronic communication a large number of alternative electronic payment systems have emerged. These include debit cards, credit cards, electronic funds transfers, direct credits, direct debits, internet banking and e-commerce payment systems. Some payment systems include credit mechanisms, but that is essentially a different aspect of payment. Payment system are used in lieu of tendering cash in domestic and international transaction and consist of a major service provided by banks and other financial institution.

OBJECTIVES OF PAYMENT SYSTEM:

The following are objectives of payment system

TIMELINESS
Mainly things not all payment are time-critical, but its timely payment. Timeliness has at least two elements. In some cases, such as emergency government payment, the timing of the availability of funds to the recipient is critical. In other cases, such as point-of-sale or online retail transaction, it is important that the merchant has immediate confirmation that the payment is on its way so that the transaction can be completed, even if the funds will not be available until sometime later.

USER-FRIENDLY
Usually every service is designed to reach the widest possible audience, so it has the intuitively understandable user interface. In addition, there is always the opportunity to submit a question a support team, which often words 24/7.

LOW LABOUR COSTS
Payment system are also usually automatic, they have lower labour costs than manual payment methods, such as cheque, money order, cash and EFTPOS.

SAFETY AND RELIABILITY
End users of a payment system need to have confidence that the system will be available when expected and that payments will reach the intended recipient at the time promised. They also need to be confident that the system is secure, so that using it will not expose them to future losses as a results of information being fraudulently obtained.

EXPENSES CONTROL
New payment system is also controlled to expenses, it is necessary to be patient enough to write down all the petty expenses, which often taken a large part of the total amount of disbursement.

RISK MANAGEMENT
Payment systems have the potential to generate a number of risks for participants, most notably credit risk. Managing these risks is an important focus of design for systems processing large values, but all systems should have risk-management features commensurate with the level risk generated.
**TYPES OF PAYMENT SYSTEM**

![Types of payment system diagram]

**LARGE VALUE PAYMENT SYSTEM**
A large value payment system is called as a systemically important payment system (SIPS). LVPS is typically processes high-value and time-critical payments. It is an ensure the smooth function of the economy, financial system and financial markets. Both at the domestic and potentially at the gross-border level.

RENTAS under real time gross settlement (RTGS) basis.

**RETAIL PAYMENT SYSTEM**
Retail payment system can be divided three typically
i) Retail payment system
ii) Retail payment instrument Retail payment cannel

**RETAIL PAYMENT SYSTEM**
Cheque Truncation & Conversion System (CTCS)
Bank Negara Malaysia wishes to announce the introduction of the cheque truncation and conversion system (CTCS) to replace the current cheque clearing system. Cheque truncation is scheduled to go live on 23 May 2008 and cheque conversion in August 2008 both to be implemented first in the Klang Valley. The rollout to the rest of the country will be carried out in phases the Penang & Johor Bahru regions by October 2008 and the East coast states and East Malaysia by January 2009.

The longer term benefit from the implementation of CTCS is expected to be reaped by business, the banking industry and the country as a whole as the electrification of cheques, capitalising on the high number of ATM cards of more than 21 million in the country, efforts are also being undertaken to position the ATM card as a debit card to be used in place of cash. And it is electronic payment service.

**ADVANTAGES:**
- Lower cheque handling costs.
- Lower risk and chance of fraud.
- Extended deposit cut-off hours.

**ADVANTAGES:**
- Lower cheque handling costs.
- Lower risk and chance of fraud.
- Extended deposit cut-off hours.

**DISADVANTAGES:**
- Costly to implement.
- Investing a declining payment mechanism.

**Shared ATM network**
MEPS provides the shared ATM network which enable bank customers to conveniently access their funds anywhere from any of the participating banks ATMs. Gone were the days when ATM is only for cash withdrawal or balance inquiry. Today, there are many interbank facilities being offered to bank customers.

**ADVANTAGES:**
- Single network.
- Legancy LAN emulation.
- High speed mbps and possibly gbps.

**DISADVANTAGES:**
- Cost, although it will decrease with time.
- New customer premises hardware and software are required.

**Interbank GIRO**
Interbank GIRO (IBG) is an electronic fund transfer payment system which allows transfer of money in between participating financial institution with in Malaysia. The BIG system is managed by my clear, a subsidiary of bank Negara Malaysia.

IBG fund transfer is secure, convenient and cost effective way to move fund between different banks. IBG services allow customers to transfer fund between own or third party for the purpose of normal money transfer or payment to loan or credit accounts.

The charges for IBG transfer is only RM1.00 for ATM machines transaction, RM0.10 for internet banking transactions and RM2.00 for transaction over the counter transaction.

**ADVANTAGES:**
- Speed.
- Security and privacy.
- Good exchange rates.

**DISADVANTAGES:**
- Compulsory transfer fees by online services.
- Danger of hacking of bank accounts and passwords.
- Occasional case of technical difficulties.

**Financial Process Exchange (FPX)**
FPX is a convenient and secure online payment solution that allow real-time debiting of customers internet banking account. It also allows immediate and direct credit into merchants account. FPX service is suitable for all business that offer products or services via the internet.
Pay anywhere, anytime via FPX through your internet banking bank account your financial details are securely encrypted and never shared.

Customers need only their internet banking accounts to make payments whenever they shop at online stores or websites. All transaction and payment are secure and real-time for retail / personal banking account transaction minimum limit is RM 1.00 maximum transaction limited up to RM 30,000.

**ADVANTAGES:**
- Customer exchanged the money at anywhere and anytime.
- Customer details are secured and never shared.
- Easy use.

**DISADVANTAGES:**
- Customer details and password are hacked.
- New technical are very difficulties.

**Direct Debit**
A direct debit is an instruction from you to your bank or building society. It authorises the organisation you want to pay to collect varying amount from your account- but only if you have been given advanced notice of the amounts and dates of collection.

A direct debit instruction differs from a direct deposit and standing order instruction, which are initiated by the payer. A standing order involves fixed payment amounts paid periodically, while a direct debit can be of any amount and can be casual or periodic.

**ADVANTAGES:**
- It can save your money.
- It gives you peace of mind.
- It saves your time.

**DISADVANTAGES:**
- Instant money means instant risk.
- Fees galore.

**RETAIL PAYMENT INSTRUMENT**

**Cheques**
Cheque is a paper based payment instrument. It is an important negotiable instrument which can be transferred by mere hand delivery. Cheque is used to make safe and convenient payment. It is remain an important from of non-cash payments.

**ADVANTAGES:**
- Payment can be stopped if necessary.
- A customer is send a statement at the end of each month.
- Can be posted more cheaply.

**DISADVANTAGES:**
- Cheques are not suitable for small amount.
- Depositing cheques into an account is time consuming.

**Credit Cards**
Standard-size plastic token, with a magnetic stripe that holds a machine readable code. Credit cards are advantage technology substitute for cash and cheques. Cardholders normally must pay for credit card purchases within 30 days of purchase to avoid interest and/or penalties.

**ADVANTAGES:**
- Pre-approved loan.
- EMI facility
- Immediate transfer of funds

**DISADVANTAGES:**
- Minimum due trap
- Ease of overuse

**Debit Cards**
Debit cards have become widely used, debit cards can function in two ways ; one like an ATM cards for immediate withdrawals of cash. Another one like a check, the money used to pay for the transaction is usually deducted from your account with in a day.

**ADVANTAGES:**
- Once you open an account most institutions will issue you a debit card upon request.
- You don’t have to carry cash or a check book.

**DISADVANTAGES:**
- Guard your PIN number. Memorize it and never write it on anything you keep with you.
- If you lose your debit card, notify your financial institution immediately.

**E-money**
Electronic cash (e-cash) or electronic money are playing more significant role in our daily life due to the rise of internet usage. Most of the money from today is in electronic. However with it will bring all positive results as nothing is perfect in this world. We can transfer funds, purchase stocks, and offer a variety of other services without having to handle physical cash or checks as long as bank is providing such serving our time.

**ADVANTAGES:**
- The simple fact of not having to print the bills or coin the coins, make the electronic system cheaper
- Save to the time
- Easy paid
DISADVANTAGES:
- Loss of privacy. Failure to carry bills prevents theft and in addition, payment means could be programmed to make the identification system larger.

RETAIL PAYMENT CHANNELS

Internet Banking
Online banking also known as internet banking, e-banking or virtual banking, is an electronic payment system that enables customers of a bank or other financial institution to conduct a range of financial transactions through the financial institution website.

ADVANTAGES:
- The customer does not have to stand in long queues because internet banking provides the customer with a majority of services which is available in normal banking operation.
- Ability to access account anytime
- No waiting for a monthly statement

DISADVANTAGES:
- High cost of technology
- Security concern, like “hackers” accessing your bank accounts

Mobile Banking
Mobile banking is a fast and convenient way of performing. All you need is a mobile phone equipped with the features required by your bank that provides this service. To enjoy the benefits of mobile banking.

ADVANTAGES:
- Fast and convenient.
- Payment may be made from anywhere that has your mobile network coverage.

- Anywhere and anytime it will be used.

DISADVANTAGES:
- The consumer may experience a charge from the financial institution for using the service.
- The one most prominent issue faced is secured of the account information stored on the mobile devices.

Mobile Payment
Mobile payment allows you to make payment to selected merchants by using your mobile phones. Bill payment and purchase of goods and services are among the cashless transactions that can be made. To enjoy the benefits of mobile payments, you have to register and open an account with mobile payment service providers.

ADVANTAGES:
- Open up to 24 hours a day, depends on the agents
- Very small fees for the agents

DISADVANTAGES:
- Poor and/or lack of technological infrastructure and reliable power supply
- Preference to paper money, as opposed to “virtual” cash in transaction

CONCLUSION:
In a monetized economy there are many different types of transactions that are conducted daily that facilitate the transfer of goods and services from one place to another, or from one person to another. The new payment system increase a peoples knowledge and play the important role in any country.

The articles explain the different types of payment system how to play the humans day-to-day life.

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